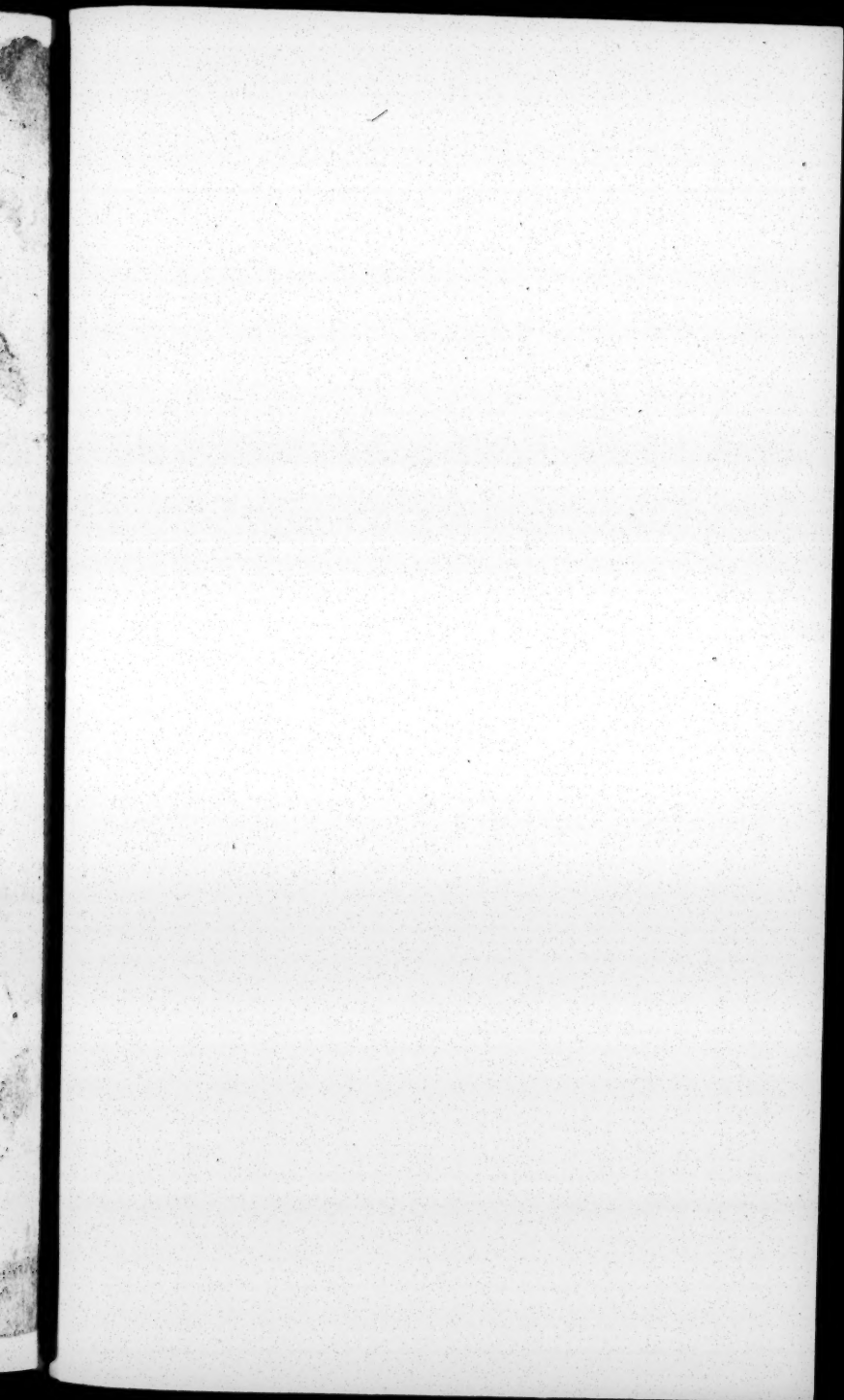




AN
ESSAY
ON
FEVERS,
And their Various Kinds,
As depending on
Different Constitutions of the Blood:
WITH
DISSERTATIONS
ON
SLOW NERVOUS FEVERS;
ON
PUTRID, PESTILENTIAL, SPOTTED
FEVERS;
ON THE
SMALL-POX;
AND ON
PLEURISIES *and* PERIPNEUMONIES.

THE SECOND EDITION.

By JOHN HUXHAM, M.D. F.R.S.

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MDCCL.





P R E F A C E.



ABOUT ten Years ago I published a small Volume of Observations on the Air, and epidemic Diseases, from the Year 1727 to the End of 1737; and I have now finished another Volume of like Observations, from 1738 to 1747 inclusive: In the latter, I think, I have been somewhat more careful and exact in the History of the reigning Diseases, and the Method of Cure.— However, as it would have been too great an Interruption to the Series of the Observations, to have entered into particular Disquisitions on the Nature and Cure of the several Diseases, there cursorily mentioned, I have reserved them for the following Essays; in which my Way of thinking and acting as to Fevers in general, and those specified in particular, will more fully appear: And this, I hope, will be of some Service to the younger Practitioners, as these Essays are the Result of a pretty large and long Experience, and the Observations were made

with the utmost Care and Diligence. — Whatever be the Event, I flatter myself they will be received as the honest Endeavours of a sincere Well-wisher, not only to his Profession, but to all Mankind.

In the following Essays I have frequently referred to both the Volumes of Observations, and in the latter Volume often referred to these Essays; so that, by these Means, I have endeavoured mutually to illustrate both the one and the others.

Though I have all along strictly kept close to Facts and repeated Experience, (and where I have Reasoned from these, I have aimed at the justest Analogy); yet I have supported my Doctrine and Practice very frequently by the Authority of the Ancients, particularly *Hippocrates*.—And this I have the rather done, as well knowing of what great Use they were to me in the Course of my Studies and Practice; and also with a View of recommending their frequent Perusal to young Physicians.—But although my Advice perhaps, in this Matter, may have no great Weight; yet I hope, the concurrent Judgment of the greatest Masters in our Profession will be duly regarded.

I will

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I will not take upon me to say, a Person cannot be a good Physician without consulting that great Oracle of Physic, and reading the Ancients; but this let me say, He will make a much better Physician for so doing: And I believe, few, if any, ever made any considerable Figure in the Profession, who had not studied them. — Indeed *Hippocrates* hath been accounted the very Father of Physic, and the Plan, which he laid down, as the *Basis* of all true and solid Medicine: And it hath been constantly held in the highest Veneration by all his Successors, at least by all those, who were capable Judges of the Matter. — The Reason of which is evidently this, that he studied Nature with the greatest Care and Assiduity, and copied and followed her too with the greatest Exactness; so that his Observations have been found perfectly just through all succeeding Ages.

It is not in Physic only, but in several other Arts, that the Study of the Ancients is of the utmost Advantage, and is universally acknowledged to be so. — Whoever would excel in Poetry, Sculpture, Statuary, &c. always consult the Works of the ancient Masters in these respective Arts, as the most perfect Models, and most just Copiers of Nature; and it

is not in Poetry only, but in Physic also, that *Horace's* Advice is good :

————— *Vos exemplaria Græca*
Nocturna versate manu, versate diurna.

In Truth the Ancients were not only Men of vast Genius, but of the greatest Diligence and unwearied Application (the *Roman* Historians have always in the Character of their great Men *incredibilis industria, diligentia singularis*) ; who kept their Eyes steadily fixed on what they would describe, and gave us the true Picture and naked Truth of Things ; which is infinitely more beautiful than all the affected Daubing and Flourishes of a modern luxuriant Imagination : The more just the Description, always the more excellent : What is a Portrait good for, that is not like the Original ? — As Nature herself, the more accurately viewed, is the more admired ; so he that gives us the truest Copy of her Face, will ever be deemed the greatest Master. In this *Hippocrates* so greatly excelled, that he had the united Applause of the Nations around him, nay they even paid him divine Honours ; for by this he was enabled to heal, as well as to know and describe Diseases. — I am fully persuaded, had his Method been strictly followed by succeeding Physicians, the Art of Healing would have long

long ere this Time been carried to a much greater Highth than it is at present: Which hath by no Means kept Pace with the many and great Discoveries, that have been made since (especially within this and the last Century) in Natural Philosophy, Anatomy, the *Materia medica*, and Chemistry.—Indeed as Man is by Nature mortal, it is impossible that Art can make him immortal: but surely it is very possible it may supply something more exact and determinate than we have at present.

From the Days of *Galen*, and indeed long before, vain *Hypothesis*, the Love of Novelty, the Fashion and Faction of Physic too often led its Professors devious, and attached them to Error; and, it is too well known, the same Misfortunes still attend us. However it must be acknowledged, that all the sober, regular, judicious Practice hath been always consonant to the *Hippocratic* Doctrine; as hath been shewn at large by the learned Dr. *Barker* in his late Essay, to which I refer the Reader, and to Dr. *Glass*'s ingenious Commentaries for a Scheme of the Practice of *Hippocrates*.

I am so far from blaming a rational Theory in Physic, that I think it the *Basis* of all just and regular Practice; but then it should be,

as *Hippocrates* adviseth, Κατὰ φύσιν θεωρεῖν *. — If ever Physic is to be improved, it must be in such a Manner, and not by *chimerical Hypotheses*, nor rash unwarrantable Quackery. — A diligent Study of the Ancients therefore, and a thorough Acquaintance with the Laws of the animal Œconomy, as rationally delivered by some of the Moderns, should be the Business of every Physician. — But some are more expeditiously popped into the World. — To be the Favourite of a great Man, (or, what is rather better, of a great Woman) to be the Tool or Fool of a Party with a splendid Equipage, and no small share of Assurance; these are Qualifications, which finish the Doctor, to the Reproach of the Profession, and the Danger of the Society.

Celsus hath been justly stiled the *Latin Hippocrates*, not only as having translated an infinite Number of Passages from the divine Old Man into his Works, but also as having generally followed his Method and Medicine. — His *Latinity* is most elegant, his Physic and Surgery surprisingly just.

* *De Vict. acut. Sect. xlv. Edit. Lindeni.*

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No one hath more closely followed *Hippocrates* than * *Aretæus Cappadox*, so far as to have affected his very Words and Stile : — His Descriptions of Diseases are admirable, and his Method of Cure greatly judicious,

Galen

* It is pretty surprising that none should take Notice of *Aretæus* before *Aëtius Amidenus*, in the fifth Century ; (he is indeed named in the *Euporista* attributed to *Dioscorides*, but few think that Piece to be the 'genuine Work of that Author) : Neither *Galen*, *Cælius Aurelian*, nor *Oribasius* mention him ; though so particular in enumerating all the Physicians of Note, antecedent to, or cotemporary with them. — And yet *Aretæus* seems to have been a very considerable Practitioner, and a Man of great Learning and Judgment : — He affects a very singular Stile, using many obsolete Words, *Homeric* and *Hippocratic Phrases*, and the *Ionic Dialect* ; which, at the Time he wrote in, was almost intirely disused : For, notwithstanding the Conceit of *Vossius*, he undoubtedly did not write till after the Time of *Nero*. — All this one would think should have made him remarkable ; especially if he practised in, or near *Rome* ; which is not improbable, as he advises *Roman Wines* to the Sick ; particularly the *Falernian*, *Surrentine*, *Signine*, and those of *Fundi*.

But further, *Galen* and *Aëtius* quote from *Archigenes* several Passages, which are exactly the same, as to Sense, Doctrine, Method of Cure, and Manner of Expression, with what we find in *Aretæus* ; only the latter gives them the *Ionic Turn*. — They both coincide in recommending some particular Medicines, which are scarce to be met with in any others, particularly the external Use of *Cantharides* ;
which

Galen should be read by all that would consult the most laboured and exact *Commentator* upon *Hippocrates*: Besides he abounds with an

which I think is not to be found in any preceding Author, except *Celsus*.

Did *Archigenes* then borrow from *Aretæus*, or the latter from the former?

It is certain, *Archigenes* practised at *Rome* with a very great Reputation, was a very celebrated Physician and Author, and as such is referred to by *Juvenal*, *Galen*, *Cælius*, *Oribasius*, *Ætius*, &c.— He is strictly criticised by *Galen*, sometimes censured, sometimes commended, but never reckoned a mere Compiler. — *Aretæus* on the contrary is mentioned by none but *Ætius* and *Paulus Ægineta*; nay, which is not a little to be wondered at, he is not so much as found in *Photius's Bibliotheca*. — This is really strange, and not easily accounted for, and would incline one to think that *Aretæus* borrowed from *Archigenes*; or rather transcribed and new-modelled him, giving him the *Hippocratic Diction* and *Ionic Dialect*. — Possibly *Aretæus* might do by *Archigenes* something like what *Cælius Aurelianus*, not long after, did by *Soranus*: But, if so, he hath vastly much better græcised *Archigenes*, than *Cælius* hath latinised (as he calls it) *Soranus*. — Upon this Supposition we need not wonder at finding the *Roman Wines* recommended in *Aretæus*, though he might practise and write in *Cappadocia*, or any where else, at the greatest Distance from *Rome*. — But these are my poor Conjectures. — Be the Matter as it will, in *Aretæus* we have a most valuable Work, a most accurate Description of Diseases, and in general a very proper and judicious Method of Cure; and it is greatly to be lamented, that the Work comes so maimed to us.

immense

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immense Number of fine and useful Observations in all Parts of Physic, and was the first that gave us any particular Account of the Pulses, their Difference and Signification: It is Pity there is so much of the *Peripatetic* and *Periphrastic* in him. The World would probably receive a judicious Abridgment of his Works with no small Satisfaction.

Had *Cælius Aurelianus* written in the Stile of *Celsus*, he would have been an invaluable Author.—As it is, we are vastly indebted to him, for the whole Doctrine of the *Methodists*, particularly of the judicious *Soranus*; as well as for the Sentiments of the Ancients on very many Disorders, which otherwise would have been wholly lost to us.—Notwithstanding his *Barbarisms*, his Description of Diseases is most just and admirable.

One of the Ancients more I would particularly recommend, and that is *Alexander of Trallis*, who in most Things indeed follows *Hippocrates* and *Galen*, and generally gives them the Epithet of *Σειότατοι*: But yet he hath an infinite Number of useful Remarks of his own, abounds with many excellent Medicines, and writes in a very judicious and regular Manner.

In

In the following Essays I have not so much aimed at a particular and methodical Dissertation on the Diseases treated of, as to give a few Hints and necessary Observations as to their Nature and Cure; for this would have made the Work voluminous, which I fear is even now not a little tedious.

I have given few or no *Formulae*, or *Prescriptions*; for, as *Hippocrates* says, he that knows the Disease, knows what is proper to cure it.—— When a Physician knows whether Stimulants or Anodynes, Relaxants or Restrictants, Attenuants or Incrassants are indicated; he can be at no great loss how to serve himself of proper Drugs, out of the vast *Materia medica*, which we at present abound with. —— He should select a few of the most effectual for his Use of each Sort, and stick to them, and not run into the immense *Farrago*, which some are so fond of: By so doing he will soon be acquainted with their real Virtues and Effects, and readily distinguish between the Symptoms of the Disease, and those caused by the Medicines; which is a Thing many Times of no small Importance. —— I have really seen in private Practice, and some publick Writings, such a jumble of Things thrown together in one Prescription, that it would have puzzled

Apollo

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Apollo himself to know what it was designed for : — Not but that there are frequently such *Complications* (and *Contra-indications* too sometimes) in Diseases, as makes some Degree of *Combination* and *Contrast* in a Medicine necessary.

But a *Formula*, or *Recipe* as it is called, can be of very little Service. — Twenty or thirty Grains of Rhubarb shall purge some as much, as twice the Quantity of Jalap will others : — One Grain of the *Theban* Extract, or twenty Drops of the Tincture, will doze one as much, a triple the Dose will another. — Besides the Constitution and Manner of living of the Patient must be considered, in Prescription, as well as the Disease : A sober temperate Person, or one that lives chiefly on Milk, Vegetables, and Water, will by no Means bear such warm Medicines, compound Waters and Spirits, as may be quite proper for those, who have dealt largely in Ragouts and Ratafia. — But this is obvious, and so is this Deduction, that we should always begin with small, or very moderate Doses of all Kinds ; and that not only the Physic, but the Drink and Diet of the Sick also should be prudently regulated : For surely what we use by Ounces and Pounds cannot but considerably affect us, as well as what we take
by

by Grains and Scruples. *Hippocrates* and the Ancients were very careful in this particular; and very exact in prescribing a *Regimen*: And in this Respect likewise young Physicians would do well to consult them. — As for those, who will neither read nor reason, but practise by Rote, and prescribe at a Venture; I must seriously advise them, at least, to peruse the sixth Commandment.



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E R R A T U M.

Page 97, Line 6, fifth, read fifth Day.

A N



A N
E S S A Y
O N
F E V E R S,
And their various K I N D S.

C H A P. I.

Of the most simple, more complex, and inflammatory Fevers.

THE great Boerhaave, in his admirable *Aphorisms de cognoscendis & curandis Morbis*, begins with the Diseases of a simple Fibre; and indeed the only Method, to attain to any considerable Knowledge in any Science, is to begin from the very Elements of that Science; for whatsoever is most simple is more easily understood, than that which is more complex: Method and Perspicuity are the natural Consequence of such a Procedure.

B

Thus

2 *Of simple, complex, and*

Thus, in examining into the Nature of Fevers, it seems most proper to consider the most simple of the Kind first.—Let us suppose then a Person, both as to his *Solids* and *Fluids*, in perfect Health, engaged in violent Exercise, as by Running, or the like: This, if long continued, will greatly encrease the Velocity, Friction, and Heat of the Blood, which, when considerably above natural, are called a *febrile State*.—Here is then the most simple Fever, arising from nothing but the encreased Action of the *Solids* on the *Fluids*, and the Re-action of the latter on the former; which soon subsides on the Cessation of the Motion, or violent Exercise.

Let us next suppose another perfectly healthy Person, exposed to cold moist Air, by which his Perspiration may be considerably suppressed; hence will follow an encreased Quantity of Humors, and an encreased Effort of Nature to throw them off, and remove the Obstructions: Whence a feverish Habit will follow, which however frequently soon wears off by the kindly relaxing Warmth of a Bed, or the like, assisting Nature's Endeavours.

A third, of an equally good Constitution, drinks too largely of Wine, or other spirituous Liquors; which, encreasing the Quantity of Humors, and also the Motion of the Blood by its stimulating Quality, produces a Fever, which

inflammatory Fevers. 3

which in like Manner soon goes off, by Abstinence, &c.

In any one of these Cases, only a simple *Ephemera*, or short Fever, is generated — But if, in the first Case, the Blood was so violently agitated and rarified, as that, by its great *Impetus*, and Dilatation of the Vessels, some of the red Globules were forced into the *serous Arteries*; an inflammatory Obstruction would be formed: As we see even externally, when the red Globules are forced into the Vessels of the *Tunica conjunctiva* of the Eye, where only *Lymph* or *Serum* should pass. And if withal the Velocity and Heat of the Blood should be so great, as to dissipate much of its thinnest Part; the Remainder would be left gross and thick, and less fit for a free Circulation through the *Minima Vascula*; and the very Serum would be turned into a Kind of Jelly. — For a Heat, not much greater than the Heat in a common Fever, will coagulate the Serum of the Blood; the Consistence of which Jelly will be in Proportion to the Violence and Duration of the Heat. — Here then, I say, by the mere simple accelerated Motion of the Blood, an inflammatory Fever would be produced, of much longer Duration, and more dangerous Consequence. — If the Inflammation seizes the Lungs, a Peripneumony; if the *Pleura*, a Pleurisy; if the Brain, or its Mem-

B 2

branes,

4 *Of simple, complex, and*

branes, a Phrenzy is generated. — And these Disorders prove much more severe, where, antecedent to this violent Motion of the Blood, there was a great Strength of the Fibres, and a great Density and Quantity of Blood.

If in the second Case, the Obstruction of the Pores and Perspiration be very considerable, the Fibres strong and tense, the Blood much in Quantity and very thick, Fevers of the same Kind ensue.

If in the third Case, to tense Fibres and much viscid dense Blood, a great Quantity of Wine, or other stimulating Liquors, be added; both the Quantity and Velocity of the Blood may be so greatly encreased, as to bring on a dangerous acute Fever, which too often follows drunken Debauches.

Now as any one of the above Causes may singly produce a Fever; on the Concurrence of two or all three, a more violent one, *cæteris paribus*, will arise. Thus from cooling too suddenly after vehement Exercise, as by exposing the Body to very cold Air, and stopping the Sweat and Perspiration at once, a very dangerous inflammatory Fever will come on; which will be much more violent, if the Blood had been heated and encreased by a large Quantity of any spirituous Drink immediately before. — By the bye, nothing so effectually carries off the ill Consequences of a drunken Bout, as keep-
ing

inflammatory Fevers. 5

ing warm, and lying long in Bed to *soak it out*, as they call it.

Now considering the proximate Causes of these Fevers, the Method of Cure is very obvious, which is by lessening the Velocity, Quantity, and Acrimony of the Blood as soon as possible. — But nothing so soon abates the too rapid Motion, Quantity, and Heat of the Blood as Bleeding; for by this Means the red Globules of the Blood and *Vis motrix* are lessened — By Bleeding *ad Deliquium*, as *Galen*, and some of the ancient Physicians, did in inflammatory Fevers, the Blood's Motion almost quite ceases for a short Time.

Bleeding therefore is certainly the first *Intention* in the Cure of Fevers, that arise from too great a Quantity, and too rapid a Motion of the Blood; and the longer it is neglected, the more viscid and acrimonious is the Blood rendered, by dissipating its more thin Part, condensing the red Globules, and heating the Serum to such a Degree, as to turn it into a Kind of Jelly. — And, by exalting the animal Salts and Oils to a greater and greater Degree of Acrimony (which is always in Proportion to the Intensity and Duration of the Heat) the whole Mass grows putrid at length, and unfit for animal Uses. — Besides, whatever Obstructions may be formed either in the extreme Branches of the *sanguine*, or Beginings of the

6 Of simple, complex, and

serous Arteries, are apt to be more and more radicated by the too violent Motion of the Blood.— So that the Neglect of Bleeding, at the Begining of any acute Disease, is very often never to be compensated in the subsequent *Stadia* of the Fever; when the *Impaction* of the obstructing Matter is so far advanced, and the Thickness and Viscidity of the Humors so great, as to elude the Force of all Manner of Attenuants and Diluents.

In general, the Quantity of the Blood to be taken away is to be determined by the Strength of the Patient and his Pulse; by the Intensity of his Fever, Heat, and the Vehemence of his Symptoms, as to Pain, Difficulty of Breathing, &c. — Nay the very *Bulk* of the Person is to be considered also; for certainly, *cæteris paribus*, a big strong Man can bear to lose more Blood than a small strong Man.— 'Tis safer however to take away too little, than too much at a Time, as the Operation may be so soon and so easily repeated, and as often as may be indicated. — If the Pain, Heat, Difficulty of Breathing, &c. abate not after Bleeding, it shews the Necessity of drawing more Blood.

And here let me caution the younger Practitioner not to be deceived by an *oppressed Pulse*, which is often the Consequence of too great a Fulness of Blood; this is manifest, by the Vibrations of the Artery becoming more free and
strong

inflammatory Fevers.

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strong after Bleeding in such Cases, as daily Experience evinces.—If he is doubtful in the Case, let him apply his Finger to the Pulse in the other Arm, while the Patient is bleeding ; and, if he finds it flag considerably, flutter, or intermit, it is Time to desist ; if it beats stronger and more open, he may proceed with Safety and Success.—There are indeed some very apt to faint on Bleeding from a natural Laxity of the Fibres, and Want of that due Elasticity, which should contract the Vessels in Proportion to the Evacuation.—These should be bled in a *recumbent Posture*, and the Orifice may be frequently stopped for a short Time, whereby Fainting will be in a great Measure prevented.—These Persons, though they have too lax Fibres and Vessels, are often plethoric, and of Course require Bleeding ; especially where the Load of the Humors begins to overbear the Power of the Heart, which is the common Case in an oppressed Pulse.

Bleeding not only lessens the Quantity and Velocity of the Blood, but it also makes Room for the Entrance of diluting Liquors into it.—Proper Dilution is absolutely necessary in all Fevers, especially in the ardent and inflammatory ; for in these the Blood is rendered too thick and viscid by the Dissipation of the thinnest Parts of it, and the remaining Serum is more and more incrassated, or jellied, by the

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great and continued Heat: So that cooling, thin, diluting Liquors are necessary to supply the continual Waste of the Lymph and Serum, and to keep the whole Mass in a due Degree of Fluxility.—These, in general, should be of the acescent, and somewhat also of the saponaceous Kind. Of the former, as they are very cooling, and prevent the Encrease of the alkaliescent Acrimony of the Humors, which would otherwise be continually advancing by the great Friction and Heat of the Blood: (for the animal Salts are greatly exalted, and made more corrosive, by the feverish Heat, and the animal Oils are by the same Cause turned rancid at length, and highly acrid: The sweetest Oils, or Butter, by great Heat, become vastly caustic.)—Of the latter, as they not only dissolve the *Lentor* better, but also keep the Humors more properly mixed, by uniting the Salts, Sulphurs, and Waters more intimately with the Blood. I have often known pure Water, drank plentifully in acute Fevers, rendered almost as pale and insipid as when drank; (which, by the Way, is a very dangerous Symptom.) Water, as Water, will not unite with oily Liquors; so that when the Serum of the Blood hath been jelied by Heat, and its oily Part exalted, and encreased, by melting down the Fat in the *Membrana adiposa*, &c. it is no Wonder that plain Water neither mixes well with the
Blood,

inflammatory Fevers. 9

Blood, nor proves an effectual Diluent. Hence therefore follows the Necessity of mixing something saponaceous with it, as Sugar, Syrup, Jellies, or *Rob* of Fruits, as Currants, Raspberries, Cherries, or the like.—Juice of Lemons, or Oranges, by mixing a little Sugar with it, and a proper Quantity of Water, becomes a very grateful Drink, and answers the Intention of a Diluent both acid and saponaceous.

Besides the Use of Diluents as to the Humors of the Body, no small Advantage will arise from them as to the Fibres and Vessels, which they tend to relax; especially when they are drank somewhat warm.—Now too great a Tension of the Fibres, &c. is naturally concomitant to great Velocity, Heat, and Density of the Blood, which always attend, or rather are the very Essence of an inflammatory Fever.—Every one knows what tepid Bathing will do externally; and it may be easily supposed that sub-tepid Diluters internally will have an analogous Effect.—In all these Views, the Blood is rendered less rapid, less viscid, and, in Consequence, less hot; which are Matters of the highest Import in the Cure of ardent and inflammatory Fevers. It may be added, that obstructed Capillaries, and obstructed Perspiration, are by such Means most safely and effectually remedied, the Humors being rendered *fluxile*, and the *minima Vascula permeable*. For it is to be
noted,

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noted, that where gentle and general Sweats follow plentiful Dilution, with Liquors of a cooling relaxing Nature, they are commonly critical, and soon carry off the Fever. I say, gentle Sweats; for profuse ones should never be encouraged in the Beginning of Fevers, as they drain off the thinnest Part of the Blood, and leave the Remainder too thick, viscid, and apt to obstruct.—In a particular Manner I have often observed them of the highest ill Consequence in the Beginning of Pleurifies, Peripneumonies, and the Small-Pox.—And for the same Reason, profuse Discharges by Stool, and thin Urine, are hurtful.

But the most pernicious Method of raising Sweats in the Beginning of Fevers, is by giving hot volatile alexipharmac Medicines, stoving up the Patients in hot Air, and smothering them almost with Loads of Bed-cloaths; for these encrease the Motion and Heat of the Blood already too violent, and add Fuel to the Fire: Nay, very often, they are so far from raising Sweat, that they prevent it, by hurrying on the Blood with too great Rapidity to give off any natural and regular Secretions.—It is well known, the higher the Fever, the less the Excretions by Sweat, Urine, Saliva, and the like.—

Certainly, if mere encreased Motion of the Blood can bring on a Fever, whatever will encrease
crease

inflammatory Fevers? II

crease that Motion will continue and augment it, which these Methods and Medicines are known to do.

For these Reasons also Blisters, which throw an acrid salt into the Blood, and greatly stimulate the Fibres, are very improper in the Beginning, at least, of all ardent and inflammatory Fevers. — Yet, how often do we see, in the common Practice, a Patient bled largely, then blistered, and forthwith put under a Course of hot alexipharmac Bolus's, Cordials, &c. ? Which is just as rational as to pull out Part of too large a Fire first, and then forthwith endeavour to quench the Remainder by throwing on Gunpowder, or Spirit of Wine; — or to lay on Whip and Spur to a Horse on the Fret, when we would stop him: which is really the Case in Blistering, where the oscillatory Power of the Vessels is too great, and the Motion of the Fluids too rapid.

After Bleeding, cooling, emollient, laxative Clysters are of very great Use in the Cure of acute Fevers, even at the very Beginning, to bring off the indurated Excrements, which frequently are pent up within the Intestins, and to give a Discharge to any bilious acrid Matter, which might otherwise, in Part at least, be resorbed by the *Lacteals*, &c. into the Mass of Blood. — Besides, they are a Kind of a warm, relaxing Fomentation to the Parts in the *Pelvis* and

12 *Of simple, complex, and*

and lower Belly, and both derive from the Head and *Præcordia*, and promote a Discharge of Urine also.

A gentle lenient Purge, likewise, is often of the greatest Service, more effectually to cleanse the intestinal Canal of the *putrid Saburra*. But I would always advise to such as act chiefly in the *primæ viæ*, as *Manna*, *Cream of Tartar*, *Sal catharticus Glauberi*, *Rhubarb*, *Tamarinds*, and the like: — All *drastic Purgers* are certainly very pernicious, and so are all the hot *aloetic Tinctures*, *Pills*, &c. — Indeed, all profuse Purg- ing is hurtful, as it drains off too much of the lymphatic Part of the Blood, and thickens the remaining. — When Nature seems to have too great a Tendency that Way, first a Dose of *Rhubarb*, then a little of the *Species è Scordio*, with a *diacodiate* Anodyne, or the like, may be proper.

In very Deed, little more seems necessary in the Cure of ardent inflammatory Fevers, than proper and well timed Evacuations, and plentiful cooling Dilution, with a few nitrous Medicines, and the acid saponaceous Juices of Vegetables; for these not only tend to keep the Blood in a due Degree of Fluidity, but also to prevent its running into a putrid State: — In giving these freely, we do but follow Nature (our best Guide) that earnestly demands them. — For how averse soever she may be to Meat in Fevers, she
ardent-

ardently desires Drink ; and it is a Symptom of very bad Omen when she doth not, till the Fever considerably abates, at least.

If, from any of the above Causes, an inflammatory Fever should seize a Person that had an antecedent sharp State of Humors, the Fever would prove much the more violent: because the acrimonious Salts would act as so many *Stimuli*, accelerate the Blood's Motion, and produce a speedier and greater Putrescence of it. — Hence therefore the utmost Necessity of Dilution in such Cases, to dissolve and wash off the Salts offending, (for nothing but a watery *Menstruum* will dissolve Salts) and likewise Medicines opposite in Nature to the peccant Acrimony. — But the Diluters also should have something of the Saponaceous in them, for Reasons hinted at above; especially when the oily Parts of the Blood are greatly encreased by the Melting down of the Fat by the Heat of the Fever: Which often happens to a surprising Degree, and very suddenly, in some very fat Persons, and which continually grows more and more acrid and rancid, and requires some saponaceous *Medium* to unite it with the aqueous Parts; otherwise it produces the most fatal Obstructions, and highest Degree of Acrimony.

As to the Manner of Dilution, I think the Sick should be allowed to drink as freely, and as often as they please, but not forced to load
their

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their Stomachs with too large Draughts at a Time; which create a *Nausea*, Indigestion, and Wind, with great Anxiety and Restlessness, and, in the Event, Vomiting, or Purging.

The Practice of *Asclepiades* was in Nothing more monstrous than in denying all Manner of Drink to the Sick, for the first three Days of the Fever: And he is very far from keeping up to the Rule he lays down, of curing *tutò, celeriter, & jucundè*; when, as *Celsus* says, *convellēbat vires ægri luce, vigilia, siti ingenti, sic ut ne os quidem primis diebus elui sineret. Lib. iii. Cap. 4.* — I am sure that he did not learn this from the great *Hippocrates*, nor from Reason, Nature, or Experience. — But this Man from a *Declaimer* turned *Physician*, and set himself up to oppose all the Physicians of his Time; and the Novelty of the Thing bore him out, as it frequently doth the *Quacks* of the present Time; and ever will, whilst the Majority of the World are Fools.

I think smaller Draughts, frequently given, the best Way of Dilution: For, of the same Quantity of Liquor drunk in a certain Time, more is like to be imbibed by the absorbing Vessels, planted thick from the Mouth to the Stomach, by frequently sipping it down, than if swallowed at once in a full Draught; because it is in this Way more frequently, and much longer

longer applied to these Vessels.—Besides, when swallowed, the Action of the Stomach and Intestines is more effectual in squeezing it into the Lacteals and mesaraic Vessels, when in small Quantities, than when they are, as it were, deluged with the Liquor.

Moreover, Dilution and Relaxation may be further carried on by emollient Fomentations, tepid Baths, cooling lenient Clysters, &c.—Bathing of the Arms and Hands, Legs and Feet, and also of the *Hypochondria*, is of very great Service in Fevers of the inflammatory Kind; (the good Effects of which I once experienced on myself) but the *Fotus* should not be much hotter than the present Temper of the Body, which may easily be adjusted by a *Thermometer*. This Method not only supplies the Blood with Moisture through the absorbing Vessels, but also greatly tends to open the obstructed, and produce a general Relaxation of Fibres, now commonly too rigid. In very dry *strigose* Constitutions, it cannot but be of the greatest Service.—The Skins and Bladders of Animals, when very dry, will transmit nothing; but, when moistened, Water, &c. will pass through their Pores.—And the Drinking frequently of tepid, emollient Liquors is at the same Time a Kind of an internal relaxing *Fotus* to the *primæ Viæ*, *Præcordia*, &c. which is of no small Consequence, especially in Inflammations

16 *Of simple, complex, and*

mations of the Lungs, Pleura, &c.—I shall only further add on this Head, that this was the Practice of the Ancients, who gave little else in Fevers, besides thin watery Diluents, *Ptisan* or Barley-water, *Hydromel*, *Oxymel*, &c. and used very frequent Fomentations and Clysters.

As encreased Velocity of the circulating Humors will of itself bring on a Fever, all Causes that encrease the Blood's Motion will encrease the Fever; the Strength of the Fever therefore will be in a compound *Ratio* of the moving Powers, *viz.* strong tense Fibres, much dense rich Blood, and many acrid Salts in it, which stimulate the Heart and Arteries to more frequent and vehement Contractions.—The large Use of very salt and spiced Meats will raise a feverish Heat, even in the most healthy.

On the contrary, the weaker and more lax the Fibres, the thinner and poorer the Blood, the less vehement the Fever.—This is the Case in what we call *slow*, or *nervous Fevers*; which are generated by low, watery, unwholesome Diet, crude watery Fruit, rainy warm and wet Seasons, long and great Anxiety of Mind, Dejection of Spirits, &c.—Here indeed a Kind of *Lentor*, or *Ropiness* of the Humors, is also generated, and is a proximate Cause of the Disease; but it is not of the inflammatory Kind (or what the Ancients called *Phlegma phlegmonodes*, which is particularly inherent in the

the red globular Parts of the Blood) for it subsists chiefly in the serous and lymphatic Vessels, which hence become obstructed; and from such a poor ropy State of the Blood few animal Spirits are generated, and they are irregularly secreted and distributed: hence the nervous Symptoms, which denominate the Fever. — And yet as there are Obstructions formed, the stagnant Lymph grows more and more acrimonious, which brings on more or less of a Fever, known by the Quickness of the Pulse, irregular Heats, Chills, &c. — All the Humors of the Body grow more and more corrosive, the longer they stagnate; even hydropic Swellings of the Legs, though at first as cold as Marble, become at last highly inflamed, the Humors at length so very acrid as to produce an Erysipelas, Vesications, Ulcers, &c. as is often observed at the Close of Dropsies.

Now as the Seat of *these Fevers* seems chiefly in the *ultima Vascula*, or the serous and lymphatic Arteries, and perhaps in the very Origin of the Nerves; and as they are always attended with too great a *Flaccidity* and *Torpor* of the Nerves and Fibres, and the Obstructions lie more remote from the great Road of the circulating Blood; it is no Wonder they are not so easily affected by Medicines, and so readily removed, as if their Cause lay more particularly in the sanguineous Vessels. — Besides it must be

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considered, that the Nerves and Fibres are not presently restored to their due Tone. — Hence we in Fact see that this Kind of Fevers is both longer in forming, and much longer in being carried off, than a common inflammatory Fever.

These two Sorts of Fevers seem to have in a great Measure opposite Causes, and in Consequence very different Symptoms and Effects. — Let us consider some intermediate febrile State, which will elucidate this whole Affair. Turn we therefore our Thoughts on an inter-mittent Fever.

C H A P. II.

Of intermitting Fevers.

THE common procatactic Causes of Agues are a moist, foggy *Atmosphere* exhaling from a swampy, morass Soil, or a Continuance of cold, rainy, thick Weather; hence in low, fenny Countries Agues are *endemic*, and in such Seasons *epidemic*. By such Constitutions of the Air the Fibres are too much relaxed, and regular Perspiration obstructed, which soon create a *Lentor* of the Blood, and that Obstructions and some Degree of Stagnation in the ultimate Branches of the *sanguineous Arteries*; 'as is manifest from the Coldness, Paleness, and Lividity

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vidity of the Fingers, Nails, Lips, &c. which immediately precede and begin the *Rigor* of an *aguish Paroxysm*. — The Blood hence recoils upon the Heart, and all the Powers of Nature rouse up to remove the Obstructions; which are soon carried off by the hot Fit, in Sweats, turbid Urine, &c. — We see a Kind of *aguish Paroxysm* brought on by Bathing in very cold Water; Paleness, Coldness, Shivering, a Stoppage of the Blood in the *cutaneous Arteries*, and Repulsion towards the Heart: you are no sooner out of the Bath than the Heart, Arteries, &c. overcome the Resistance from the precedent *Constriction*, and bring on an universal *Glow* of Heat. But, if the Person bathed be weak, the Water very cold, and the Continuance in it long; he may die in the cold Bath, as a weakly Patient may in the cold Fit, (which commonly happens, when the Disease proves mortal) the Heart not being able to overcome the Resistance.

If the Fibres are pretty strong, the *Lentor* and Obstructions not very great; the Paroxysm easily wears off by this Effort of Nature. — But if the *Lentor* and Obstructions are great, the Fibres strong and more tense; the Fever runs very high in the hot Fit, and is readily changed by wrong Management into an *acute Continual*. — Indeed it is observable that some epidemic Agues, in some Constitutions, at first put on the Appearance of ardent Fevers, and then

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break into Quotidians, or Tertians; and it is not uncommon for a Quotidian, or Tertian, to be changed by a very hot Regimen at the Beginning, as volatile Spirits, Brandy, Pepper, Snake-root, &c. (which are too often quacked upon the poor Patient) into an inflammatory Fever with Phrenzy, Pleurisy, or Peripneumony.— So that the Constitution of the Solids and Fluids, in some Kinds of Agues, seems not greatly different from that of inflammatory Fevers. — I well remember, that the *catarrhal Fever*, which spread through all *Europe* under the Name of *Influenza* in the Spring, 1743, frequently became pleuritic, or peripneumonic; and as frequently, after two or three Days, ran into a Quotidian, or Tertian: the Difference of the Constitutions of the Patients, &c. thus altering the Face and Nature of the Disease.

Sometimes quotidian, semi-tertian and tertian Fevers, are very rife and cotemporary with epidemic Pleurisies, and Peripneumonies; as particularly in * 1744: — The cold Season, in some Constitutions, bracing up the Fibres so high, and condensing the Blood into such a Degree of Viscosity, as to bring on these inflammatory Fevers on taking Cold, or other Accidents; — whilst, on Persons of a more lax System of Nerves and Fibres, and more weak,

* *Vid. Obs. nostr. de Aere & Morb. Epidem. Vol. II. Martio, Aprili, Maio, 1744.*

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watery Humours, it only raised the Powers of the oscillatory Vessels so high, and warmed the Blood so much, as to carry off the ill Consequences of deficient Perspiration, and rosy heavy Juices, by repeated Fits of a regular Intermittent.— Thus we often see Persons of low Spirits, and a leucophlegmatic Habit of Body, raised into a feverish Disposition by the Use of warm invigorating Medicines, Chalybeates, &c. And if this Turn of Nature be well managed, it generally ends in their perfect Recovery.— If you can change a slow nervous Fever into a regular Intermittent, you soon cure your Patient.

But further, I have more than once known Pleurisies, Peripneumonies, and inflammatory Rheumatisms, reign very much in a cold, dry Spring, and a great Number of Intermittents succeed them in the following warmer Months; the Heat abating the Rigidity of the Fibres, and resolving in some Measure the Viscosity and Density of the Blood: Whereas had the Solids continued more tense, and the Blood more dense and viscid, inflammatory Fevers would have been the Consequence, on taking Cold, or the like; which now only produced an aguish Disorder.

Regular *vernal Intermittents* have many Times very salutary Effects, by breaking the *Lentor* and *morbid Cohesions* of the Blood; as a Storm

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purges a thick foggy Atmosphere. The invigorating Power of the advancing Spring, and the encreasing genial Warmth and Dryness of the Air, by rarefying and attenuating the heavy, fizy Humors, and opening the Pores, are the Reasons why vernal Agues go so easily off at the Approach of Summer. And probably the enlivening, attenuating Influences of the growing Spring, actuating the Powers of Nature to throw off the heavy, ropy *Colluvies*, that in some may be considerably amassed, during a cold moist Winter, may be one Reason, at least, of the Frequency of Agues in the Spring Season.—It is certain, all Nature at that Time of the Year undergoes a Kind of *Orgasm*; even the torpid Vegetables regain fresh Life, and their concreted Juices resume new Motion.

It appears from * Experiments, that the Blood in Quotidians is more dense and tenacious than in Tertians, in Tertians than in Quartans; so that in Quotidians, *cæteris paribus*, it comes nearest an inflammatory State: And it is commonly noted, that if the Fever, from a regular Tertian, runs into a Semi-tertian, or Quotidian, or greatly anticipates the Time of the regular Paroxysm; a remittent, or continual Fever is forthwith the Consequence.—And this is too often effected by a very hot Regimen, or a too hasty Use of the Bark.—Indeed

* See Dr. Langrish's *Modern Theory*, &c. Chap. V.

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we very frequently see that Quotidians, and double Tertians, (which, by the bye, are oftentimes the same Thing) will not bear the Bark at the Beginning; till the saline Draughts, proper diluting Attenuants, and, in some Cases, Bleeding, Purging, and Vomiting have been made Use of.—In Truth, I never think it prudent, in such Kinds of Intermittents, to give the Bark, in any Form, till after four or five Paroxysms at least, and after having drawn more or less Blood from Persons pretty much inclined to the plethoric;—and this Method is more especially to be observed in vernal Agues. — I must further note, that as nothing is more effectual in curing Agues than well-timed Vomits, and those too repeated; (as Nature shews us, by making this one of her constant Efforts in the Paroxysm) so previous Bleeding makes them much more safe, in full sanguine Habits, especially when given in the Paroxysm; which is frequently practised with great Success.—Nor is this a new Practice; for *Celsus* advises, *cum primum aliquis inhorruit, & ex horrore incaluit, dare ei oportet potui tepidam aquam subsalsam, & vomere eum cogere.* Lib. iii. Cap. 12.

We see then that some Kinds of Agues border too near on the inflammatory State, and require a cool Regimen, proper Dilution, and, many Times, Bleeding to some Degree, as well as other Evacuations. I have known it

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necessary to join Nitre to the Bark during the whole Process of Cure, and even sometimes to suspend its Use for a Day or two, and give Salt of Wormwood and Juice of Lemons with Infusion of Chamomile-flowers and *Sevil*-orange Rind, or the like. — If an Intermittent runs into an inflammatory continual Fever, Bleeding and a gentle cool Purge will soon reduce it to its *Type*.

But as some Intermittents are apt to run up into an inflammatory Fever, far the greater Number, especially in the autumnal Season, are disposed to sink into low irregular Remittents, putrid or slow nervous Fevers. It is not a very rare Thing to find a Quotidian fall into a Tertian, thence into a Quartan, and at last end in a Dropsy; and this particularly in some Seasons and Places. This evidently shews that the Fibres grow more and more enervate, and the Blood very vapid and watery. — Even vernal Tertians, which oftentimes cure themselves in a favourable Season, prove many Times exceeding obstinate in wet, rainy Summers, and the Patients are exceeding apt to relapse on the slightest Occasions: This was particularly observable in the wet, cold Summers of 1734 and 1735*. — In such Cases I have known the daily Use of the Flesh-brush, and frequent cold

* *Vid. Obs. nostr. de Aere & Morbis Epidemic. Vol. I.*

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Bathing, of very great Use in preventing Relapses.—Perhaps it is the Winter-cold, bracing up the Fibres, that commonly puts a Stop to Agues in that Season; for it hath been noted, that they are often very stubborn in a warm moist Winter.

Improper Evacuations by Bleeding and Purging, an unwholsome, gross, glutinous Diet, vapid rosy Drinks, as stagnant heavy Water, foul Beer, and the like, render these Agues very *anomalous*, obstinate and dangerous, and make them frequently degenerate into malignant, putrid, or slow nervous Fevers; otherwise they end in Dropsies, Jaundice, or universal Obstructions of the *Viscera* of the *Abdomen*, and frequently in Diseases of the *Genus nervosum*. — In a Word, whatever takes down the Spring of the Fibres too much, and weakens the *Crafsis* of the Blood, will be productive of these Mischiefs; and this especially, when due Perspiration is frequently interrupted by cold damp Air, Want of due Exercise, gross heavy slimy Diet, as Fish, Lettuce, Cucumbers, and other watery insipid Fruits, which are known to suppress the Perspiration greatly.

These Observations then evidently shew the Necessity of using a warm, invigorating attenuating Regimen in the Cure of Agues, which affect Persons of a lax Habit of Body, and a poor thin Blood; in a particular Manner when
a wet,

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a wet, foggy Atmosphere prevails. — Under such Circumstances the *Cortex* of *Peru*, however good and carefully chosen, frequently proves ineffectual, unless assisted with proper Alexipharmacs, as *Rad. Serpentar. Virgin.* — *Contrayerv.* *Myrrh*, *Camphire*, &c. — After four or five Paroxysms, warm Chalybeates may be added with very great Success. — But never be too hasty in giving the *Bark*, or Chalybeates, where the Patient hath a *yellow Cast of the Countenance*, a *tense Abdomen*, and a very costive Habit of Body. — In which Case *mercurial*, *saponaceous*, *Deobstruents* with *Rhubarb*, *Aloetics*, *regenerate* or *soluble Tartar*, should be premised; nay they may in some Cases be very conveniently joined with the *Bark*.

From the whole then of what hath been said on this Head, it appears that a regular Tertian is a *Medium* between an inflammatory and a slow nervous Fever; and that, on the one Hand, the Constitution of the Solids and Fluids may be so highly wrought up as to fire the Blood into a continual Inflammatory; and that, on the other, it may be so far depressed as to bring on the low *Influent*, or *slow nervous Fever*. — And hence the Cause and Cure of such Fevers respectively seem to be obvious.

Now as every Kind of Fever is a Struggle of Nature to relieve herself from something oppressive, we should always favour her Endeavours

vours

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vours by the most proper Means that Reason and Experience suggest. But we should be very cautious, at the Beginning especially, how we proceed in spurring on, or bridling her Efforts, till we have well considered the Nature, Quantity, and Quality of the Disease, and the Constitution of the Patient. In order to this it will be highly necessary to make a diligent Examination into these two Things; 1st, *the State of the Solids*; and 2^{dly}, *that of the Fluids*.

C H A P. III.

Of the State of the Solids.

PRobably all that we call Firmness of Body, and Strength of Constitution, is originally owing to the *rudimental Stamina* of our Bodies; and on the strong, or weak, Texture of them, in a great Measure, depends our future prosperous, or adverse Health.—There was indeed a determined Constitution and Strength of Fibres designed by Nature, and any Deviation from it may be called a Disease; which may arise from weakly Parents, Errors in Diet, Exercise, and many other Things: And this Deviation I would have heedfully attended to in Practice.

A due Proportion of *Tensity*, consistent with a proper Degree of *Flexibility*, constitutes the
happy

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happy *Medium* in which perfect Health consists. Too great a Degree of Rigidity tends to waste the nutritious Juices too suddenly, and ends in a *Marasmus*; as too great a Laxity of the Vessels makes them liable to be overloaded, and brings on a *Leucophlegmatia*, or Dropsy. The former over-digests the animal Fluids, the latter doth not sufficiently assimilate what is taken in by Way of Nutriment.

A very strong elastic Set of Vessels act with great Force on the contained Fluids, and produce much Friction, and of Course great Heat, and withal a constant and large Dissipation of the more subtile and aqueous Parts, which render the Blood-globules, in Proportion, more numerous, more dense and compact, and the Humors in general more viscid; as is evident by the State of the Blood always observable in strong laborious People, which is ever of this Kind.— Where this considerably overbears the Standard of Nature, it becomes *constitutional Disease*, and causes a perpetual Fever, as it were, and at long Run ends in *Atrophy* and a compleat *Marasmus*, if some violent inflammatory Disease does not snap them off much sooner; and to which they are exceedingly liable, and from which, on Account of the dense viscous State of the Blood, the Rigidity and Contraction, or *Stricture* of the Vessels, they escape with much greater Difficulty than others
of

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of softer Fibres, and a more weak, but fluxile, Blood. There is no Advantage without an Alloy; the Rose hath its Prickles; these Disadvantages flow even from the highest Health and Vigor: *Human Frailty!*

In such Constitutions the Use of emollient farinaceous Drinks and Diet is highly proper, and frequent subtepid Bathing, especially in very dry, and very cold Weather. — Where Persons of such a Frame fall into inflammatory Fevers, as Pleurifies, Peripneumonies, or the like, I would always advise great Plenty of tepid, watery, emollient Diluents to be perpetually sipped; by which Means the warm Vapor relaxes the Parts and Passages of the Lungs, and promotes a freer Flow to the Blood through them, and a more easy and copious Expectoration; at the same Time that the Blood is thus most effectually diluted. — Withal Fomentations, emollient and diluting, moderately warm (not too hot) should be applied to the Feet, Legs, Hands, Arms, *Hypochondria* and Breasts; which have oftentimes a surprising good Effect, and are of infinitely greater Advantage and Efficacy than some of the *indigestible Trash of the Shops*, upon which so much Stress was formerly laid.

I have known the preposterous Use of the *cold Bath*, on a *strigose* and a *too rigid Habit* of Body, of exceeding great Detriment; for that
even

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even yet augments the *Corrugation* and *Tensity*. — You may generally observe that most, who use the cold Bath, grow somewhat thinner, though more vigorous and active. — Some Years since I was consulted by a Gentleman of a thin scraggy Habit of Body, but of much natural Vivacity of Spirit, and one that constantly used much Exercise, and had long accustomed himself to cold Bathing in the Sea very frequently, even sometimes in very cold Weather: He wasted daily in his Flesh, and at length became weak and very low-spirited. — I judged, that by this Method the fibrous System was overbraced, and that too much of the finer *Lymph*, and even of the *Liquidum nervosum*, was forced off by the Pores, &c. For he all this while used a sufficient Quantity of Food, and had no extraordinary sensible Evacuation. — I put him on a soft, relaxing, nourishing Diet, forbade him the Use of the Cold-Bath, and at last sent him to use the Waters at the *Bath*: — The Event was, that he soon recovered much better Health, Spirits and Flesh. Nothing on the contrary more effectually strengthens weak, lax Fibres than cold Bathing. By this weak, flabby, rickety Children are soon invigorated, as it were to a Miracle. — Indeed in the Times of Popery and Ignorance, when the Priests were Knaves, and the People Fools, many a *Well* was sanctified for nothing but pure *cold Water*,
the

Of the State of the Solids. 31

the Virtues of which the *Miracle-mongers* wholly attributed to a *Saint* of their own making.

The Doctrine of the ancient *Methodists*, with Respect to the *Strictum* and *Laxum*, if rationally pursued, might be of great Service in the Practice of Physic; though they indeed frequently confounded them both in Theory and Practice. But *Boerhaave* hath made many rational and valuable Observations on the Diseases of too tense, and too lax Fibres, which are of exceeding great Use in Practice.—There seems to be another *Species of Fibres* not taken Notice of, which may be called the *tender*, or *delicate Constitution of the Solids*, which is most readily and highly affected with Pleasure, or Pain; but in which the *Stamina* are so slender, that a very slight Accident breaks them. This is often observed in thin, fair Persons, of a very delicate Frame, but exceedingly lively; in whom the *Spirit* is willing, though the *Flesh* is weak: Such very often fall into a *Hæmoptoe*, or other *Hæmorrhages*, Colliquations, and a pulmonary *Phthisis*, and thence become what is peculiarly called Consumptive.

We have taken a short View of the ill Effects of a too great *Stricture*, or *Tension* of the Solids; let us next cursorily see what Disadvantages arises from their too great Laxity.

Weak Vessels do not sufficiently act on the contained Fluids, they do not sufficiently *com-*
minute,

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minute, round off, and assimilate the chylous Particles: — Indeed the Chyle itself, where the Organs of Digestion are weak, is never well prepared. — Where the Vessels have a due Tone, and act with Vigor on the nutritious Juices which they receive from the Stomach, &c. no chylous irregularly formed Particles are to be found in the Blood after a few Hours from the Repast; but, in weakly *leucophlegmatic* People, they are never, or not till after a very long Time, reduced into Blood-globules, and a proper *Serum*. — Besides in these lax Habits the Blood itself is not sufficiently actuated, and driven on with Force enough to keep a due vital Warmth, nor to work up the Salts and Sulphurs, or Oils, to such a just Degree of *Tenuity*, as may fit them to serve the Purposes of animal Nature; nor are the red Globules of the Blood (the great Principle of Life and Heat) duly compacted, and moulded into a sufficient Roundness and Firmness. — Hence irregular Concretions in the Vessels, a *Lentor*, or *Ropiness* in the *Serum* and *Lymph*, few animal Spirits, and all the Secretions weak and imperfect. — From the whole follow *Cachexy*, *leucophlegmatic* and dropical Disorders, irregular intermittent and remittent Fevers, or those of the slow nervous Kind; the Humors running into a Kind of Putrescence for Want of due Motion and Circulation, and stagnating in the *ultima*

Of the State of the Solids. 33

tima Vascula, on Account of the Obstructions continually forming from the Want of a due Action of the Vessels, which do not sufficiently agitate, comminute and protrude their Contents.

Now all Humors of the Body, that stagnate, soon begin to corrupt and grow acrimonious, and that too many Times to such a Degree as to bring on Fevers of the worst Kind: For though the Circulation may be very languid, from the Weakness of the contracting propelling Vessels, yet it is sufficient to cause some Degree of feverish Heat from the stimulating Acrimony, and at last a general Putrefaction; witness the *chlorotic Fevers*, which very often prove of exceeding dangerous Consequence.— Cold hydropic Tumors of the Legs frequently end in a Kind of Erysipelas and Gangrene.

A due Consideration therefore of the State of the Solids is a Matter of high Importance to Physicians, not only in chronic, but also in acute Diseases; for they are generally the primary efficient Causes of the particular States of the Fluids. For Instance, we may naturally conclude that a Man of a robust Constitution, strong, rigid Fibres, and used to much Exercise, hath a dense rich Blood, inclining to such a Degree of Viscidity, as will bring on Inflammations on the Accession of a feverish Disorder; and, of Course, that timely Bleeding is the

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34 *Of the State of the Solids.*

proper Way to prevent it: On the contrary, that a weak, lax, flabby Constitution hath a poor thin, watery Blood, and cannot bear Bleeding well, nor large Evacuations.

A diligent Enquiry of this Nature is of vast Concern in the Beginning of acute Diseases, particularly in the Small-pox, and other eruptive Fevers; so as to determine one to bleed, or not to bleed.

*Animals imperfect
health are not
thrown into a
violent fever
the rashness as
those in full
health -*

For Instance, where a strong Man, with a strong Pulse, is seized with violent Symptoms of the Small-pox, it would be unpardonable not to bleed before the Eruption; for we cannot but suppose the inflammatory Fever must run high in such a Constitution; but it would be great Rashness to bleed Persons of a weak, lax Habit, unless some very urgent Symptom demanded it.—Yet how little is this regarded in the vulgar Practice? For some bleed, and vomit, of Course, upon the least Appearance of an Attack of the Small-pox; whereas others are so fearful of weakening their Patients, that they suffer them to die of the Inflammation, even abstracted from the Virulence of the Disease.

If a Physician hath a previous Knowledge of the Patient, he can be at no great Loss in judging of his Constitution; and therefore *Celsus* rightly pronounces, *cum par scientia sit, utiliore tamen*

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tamen medicum esse amicum quam extraneum *.

When that is not the Case, hard firm Flesh, dry Skin, great Heat, Thirst, and Colour, hot Breath and violent Pains, with a strong, tense, quick Pulse, are pretty evident Symptoms of strong, very elastic Fibres, and of an ardent or inflammatory Fever.—A weak, quick, soft Pulse, no great Heat, or Colour, little Thirst, pale Urine, a soft Flesh and Skin, clammy, partial, irregular, cold, or profuse Sweats, with Heaviness and Anxiety, rather than severe Pains, and a moist, though perhaps a white coated, or foul Tongue, denote the contrary.—But in Truth these Things are rather to be learned from Experience, than taught by Precept:—Therefore I shall say no more on this Head.

C H A P. IV.

Of the State of the Fluids.

THE State of the Fluids should next be considered, which, in a great Measure, depends, as was said before, on the Condition of the Solids.

There is then, 1st, a State of the Blood, in which the Humors are too dense and viscous, in which the Blood-globules are in too great

* *Præfat. sub. finem.*

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Quantity, and too closely compacted or condensed, in which the serous Globules are so likewise.—In a Word, in which the whole Mass of the Fluids is too glutinous, and too apt to concrete into a solid Form.—Persons of vigorous Constitutions, of strong Fibres, that use much Exercise, and a full Diet, are peculiarly subject to this State.—Now when the Blood-globules are very dense, and in great Quantity, and the Vessels very strong and elastic, a great *Momentum of Motion* must be produced in the circulating Fluids, and of Course great Friction, and much Heat, which both dissipates the more fluid Parts of the Blood, and encreases its Viscosity ; so that the Residue becomes very glutinous, and less fit to pass the extreme Branches of the capillary Arteries ; and hence Obstructions, hence Inflammations.

Besides great Heat tends to coagulate the *Serum* ; a Heat, not much above the common Heat in an ardent Fever, will turn the *Serum* of the Blood into a Jelly, as is found by Experience:—Hence, when Blood is drawn off in high inflammatory Fevers, it appears covered over with a thick glutinous Coat, or *Buff*, as it is called ; I have seen it in some severe pleuritic and rheumatic Disorders near an Inch thick.—That it is thus formed by the febrile Heat, is manifest ; for at the first Bleeding, at the very Beginning of the Fever, it shall often
appear

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appear pretty florid, tho' very dense; whereas on the second, third, or fourth Bleeding, when the Heat hath had a longer Continuance, and been encreased to a greater Degree, it becomes exceeding sizzly, and covered over with a very thick Buff:—And indeed, in general, the stronger the Fever, and the Person from whom it is drawn, so much the more thick and tenacious.—And this in a particular Manner happens in Fevers attended with violent Pain, as Pleurifies, Rheumatisms, &c.—For the Pain being a *Stimulus*, which greatly encreases the Motion, Friction, and Heat, it *incrassates the Serum* in Proportion to its Vehemence.—And the inflammatory *Size* also sticking in the extremely small Vessels of the Membranes, &c. over-distends them, and produces further Inflammations and Pains; so that they mutually encrease one the other. Tho' this dense State of Blood, in Health, is attended with great bodily Strength, a strong firm Pulse, and much natural Heat; yet, on the Access of a Fever, it produces very violent Symptoms, quickly fatal, unless prevented by timely Bleeding, cooling, diluting, emollient Drinks and Medicines.

But further, an Over-fulness of even good Blood is a Degree of Disease, and therefore *Hippocrates*, * pronounces the *athletic* *Ευεξία*

* *Aphorism 3. Sect. i.*

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dangerous, and *Celsus* elegantly says from him, that Persons of such a Habit *suspensa habere bona sua debent* *.—Such a *Plethora* not only over-distends the sanguineous Arteries, but also too much dilates the Orifices of the serous and lymphatic Arteries; by which, on the slightest Occasions, the Blood-globules are forced into them, and form Obstructions *errore loci*, as it is called: Whence Inflammations and Ruptures of the Vessels frequently follow, particularly in the Brain and Lungs.—Here nothing will relieve equal to Blood-letting, which (if not too immoderate) is so far from weakening, that it strengthens the Patient, by restoring a due *Æquilibrium* between the Solids and Fluids: The keeping up of which however is a Matter of great Nicety in some Cases and Constitutions; tho', in general, it admits of a considerable *Latitude*, even consistent with Health. Some delicate, florid, plethoric People suffer immediately from a very small Degree of over, or under, Living; and I have known some Men of this Constitution, that have had as regular a *menstrual Discharge*, by some Kind of Hæmorrhage, as the more delicate Sex.—The best bred, and most accurately fed, *Cock*, will not hold his *athletic State* above twenty-four Hours†, and dwindles from it surprisingly

* *Lib. II. Cap. 2.*

† See Dr. Bryan Robinson on the Food and Discharges of human Bodies, p. 119.

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soon—*Quia non ultra progredi potest, retro, quasi ruinâ quâdam, revolvitur*, as Celsus * says of a plethoric Man.

There is, 2dly, a Constitution, or Crasis of the Blood, quite opposite to the former, in which there are too few Blood-globules, and those too loosely compacted; and in which the Serum is too watery and vapid, and sometimes of a ropy slimy Nature. From this weak pituitous Blood all the Secretions are imperfect, and not sufficiently participant of an animal Nature; the *Bile inert*, the animal Spirits flat and deficient, the *Saliva* a mere insipid Mucus, and so on.—Hence universal Indigestion, Weakness, Coldness, Paleness, *Cacochymy*, Dropsy, &c.—In a Word, such a slow Motion of the Humors, that at length, for Want of a due Circulation, they run into morbid Concretions obstructing the Vessels in some Places, and stagnating in others, where they fall into spontaneous Corruption, productive at last of such a Degree of Acrimony, as to end frequently in Fevers of a very malign Nature, and dangerous Consequence: And this the more so, as the Vessels, in such a miserable Constitution, have greatly lost their Elasticity, and the Blood its most vital Principles:—So that, in the Event, either the *slimy Lensor* stagnates up to the Heart, or the corrupted Hu-

* *Lib. II. Cap. 2.*

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mors corrode and destroy the most delicate and essential Parts of the animal Fabric, particularly the *Compages* of the Brain, where the Humors naturally move exceeding slow, and the Vessels are of the most tender Structure.— Thus as too rapid a Circulation often bursts the minute Vessels; so the Humors, moving too slowly, stagnate, corrupt, and at length corrode them,

These two different States of the Fluids may not improperly be called constitutional, as they naturally follow the respective State of the Solids; so as that a strong rich Blood always attends a strong elastic Set of Vessels, and a weak watery Blood a relaxed Habit of Body: where either considerably deviates from the Standard of Nature, it becomes a real Disorder, and is to be duly regarded in whatever concurring Disease happens*.

* *Ardent and inflammatory Fevers are naturally the Effect of over-elastic and rigid Fibres, and a very dense viscid Blood; as the low and slow nervous Kind are of a too lax State of Vessels, and a weak and thin Blood. — But there are several Diseases, especially those arising from Contagion, which are common to both.*

CHAP. V.

Of the dissolved and putrid State of the Blood.

BUT, besides these, there is moreover a *third State of Blood*, of more dangerous Consequence than either; I mean a State of it, that more immediately tends to *Dissolution* and *Putrefaction*:—This is evidently the Case in some *Scorbutics*, (as they are called) where, without any considerable, antecedent, sensible Disorder (more than perhaps a Kind of Laffitude and Langour) Persons have, on a sudden, an Eruption of violet-coloured, livid, or even black and blue Spots all over their Body, and forthwith fall into profuse, and sometimes dangerous, and even fatal *Hæmorrhages*, when they have scarce thought themselves, or been thought by others, to be under any Manner of Disorder.—Abundance of Instances of this Kind happen: I have seen a great many both in Children and grown Persons, and frequently foretold the ensuing *Hæmorrhage*.

Where *Women* have such Eruptions, or black or blue *Vibices*, or large irregular Spots like Bruises, they are always subject to a vast Overflow of the *Catamenia*, if not to other profuse *Hæmorrhages*.—Nay when Persons of either Sex are affected with these Appearances, they
are

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are apt to bleed excessively from the slightest Wound, and very often without any, from the Gums, Nose, Guts, or urinary Passages.

The Blood of such Persons, when it hath been drawn off, in order to prevent the further Progress of the Hæmorrhage, as was imagined, (which by the Way is very improper, unless there are very manifest Signs of a *Plethora*) always appears a mere Gore as it were, not separating into *Craassamentum* and *Serum*, as usual, but remaining in an uniform half-coagulated Mass, generally of a livid, or darker Colour than usual, tho' sometimes it continues long very florid; but it always putrefies very soon.—It is even observable, that the *Breath* of such People most commonly stinks much before the Eruption, and their *Urine* frequently smells very rank; evident Signs of the beginning *Putridity* of the Humors; which, growing more and more acrimonious, at length erode the Vessels. For these Kinds of Hæmorrhages often happen to Persons, that have not the least Sign of a *Plethora*, no full, no very quick Pulse, little or nothing of a feverish Habit, nor under the Use of violent Exercise; so that they happen from the *Corrosion*, not the *Rupture*, of the Vessels broke open by too great a Quantity and Velocity of the Blood.—In some very tender and delicate Constitutions indeed, a very small Effort will sometimes burst their
fine

fine thin Vessels, as is observable in some, who are subject to a *Hæmoptoe*, or Bleeding at the Nose from every small Accident; but these Hæmorrhages are seldom attended, or preceded, with livid, or violet-coloured Eruptions, &c.—In these Cases Drawing of small Quantities of Blood is proper, to abate the too great *Impetus* on the tender Vessels, eventho' there may be no apparent *Plethora*.

Tho', I am persuaded, the above-mentioned Hæmorrhages most commonly arise from an *acrimonious State of the Humors*, which breaks the *Crafsis of the Blood*, and corrodes the Extremities of the capillary Arteries; yet they sometimes also happen from a too loose Contexture of the Blood-globules, not sufficiently compacted by the Action of the Heart, Arteries, &c. for Want of which they become *oblate Spheroids*, or irregularly formed *Moleculæ*, instead of *regular Spheres*, and of Course of a greater Diameter, and a less firm *Compages* than natural.—But it appears from microscopical Observations (especially those made with the *Solar Microscope*) that the Blood-globules, in passing thro' the minuteft Ramifications of the sanguineous Arteries, change their globular, into a very oblong Figure frequently, in order to pass thro' these exceeding small Vessels.—And it is easy to conceive how these loosely cohering Globules may be broken
in

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in their Passage, as the enlarged Bulk makes their *Transit* more difficult.—Now as these broken Parts are of much lesser Diameter than the original Globules, they may readily enter, and even pass thro' some of the excretory Ducts, and transfuse *per Diapedesin*, as the Ancients called it.—That this is so in Fact seems to appear from the bloody Urine, Stools, and other Hæmorrhages, which sometimes happen without any Manner of Pain, Violence of Motion, or the least Suspicion of the Rupture of any Vessels:—Nay, I have more than once or twice seen in malignant Fevers, and that too where the Motion of the Blood was far from being very rapid, a Kind of * bloody Sweat from the *Axillæ*, tinging the Linnen almost of a *Burgundy Wine* Colour.—And it is observable, that when this Sort of Hæmorrhages happens from the Nose, the Matter is a thin bloody *Ichor*, not concreting, as Blood commonly doth from the Nose of Persons in Health, or in an inflammatory Fever, which is generally very thick, shining and florid:—Some *chlorotic Girls* are vastly apt to bleed from the Nose, and yet their Blood doth but just colour a linnen Cloth.—The *Petechiæ*, *Vibices*, or livid *Stigmata*, that very often attend these Hæmorrhages, shew that the Blood-globules are dis-

* Dr. Hodges, of the Plague, observed purple Sweats in it, and some like Blood.

solved,

solved, or broken down, and enter into the serous Arteries, *Vasa exhalantia*, &c; where sticking fast they form these Appearances.— And I have particularly noted, in some putrid, malignant Fevers, a Kind of yellow, or rather dun *Petechiæ**, vastly numerous, and of not less fatal Omen than the others: Here the Blood-globules were broken into such small Particles, as to have quite lost their original Colour when combined. Perhaps the fuliginous Sweats, and dark-coloured, or black Urine with a livid Sediment, which sometimes happen in Fevers of the malignant Kind, arise from a broken corrupted State of the Blood-globules: I have seen several Times the Urine rendered almost quite black, depositing an immense Quantity of Matter nearly of the Colour of *Coffee-grounds*.—And we are sometimes surpris'd to see the Face and Hands of the Sick grow *dirty*, and *sooty* as it were, tho' all imaginable Care was taken to keep them clean.

Besides there are some Things that seem to destroy the *Copula* of the Blood-globules, and greatly promote the *Secession* of the *six serous Globules*, that compose them, one from another; particularly *Laurel-water*, which makes the *Crassamentum* vastly less dense, and exceed-

* *Vid. Obs. nostr. de Aere & Morb. Epidem. Vol. I. Ann. 1735, Mart. & Aprili; & Vol. II. Anno 1740, Junio.*

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ingly more soft and tender than natural, and turns the Serum red, or of the Colour of *Burgundy Wine*, as appears from the curious Experiments * of Dr. *Nicholls* and Dr. *Langrish*. †. —The Bite of the Serpent *Hæmorrhous* || causes such a Dissolution of the Blood, that it breaks forth from all Parts of the Body, even the very Pores, and kills by an *universal Hæmorrhage*. Possibly *profuse Sweats*, *Diarrhæa*, *Diabetes*, and spontaneous Salivations, may arise from a Kind of Dissolution of the serous Globules.—A long and large Use of *Mercury* will turn the whole Mass of Blood into a mere watery *Colluvies*.

But, as I said before, this broken, corrupted State of the Blood-globules is, in general, the Effect of Acrimony. ‡ *Sal volatile oleosum* mixed with Blood fresh drawn, destroys, or dissolves the Globules in less than a Minute; ** Spirits of Harts-Horn, taken in large Quantities, will produce Hæmorrhages; and so will frequent and large Doses of Aloetics, as I have again and again observed.—Indeed, such a State

* Dr. Mead of Poisons, 3d Edit. p. 270.

† See his Experiments on Brutes.

|| See Lucan, Dioscorid. Nicander in Theriacis, &c. Dr. Mead of Poisons.

‡ See Leeuwenhoek. Epist. ad Christoph. Wren, Arcan. Natur.

** Arbuthnot of Diet, p. 106.

of Blood is commonly brought on by acrimonious Diet, Medicines, &c.—Thus the salt and half rotten Provisions of Sailors, in long Voyages, cause such a Sharpness and Corruption of the Humors, that they are rendered almost unfit for the common Uses of Life, producing great Weakness, Languors, wandering Pains and Aches, stinking Breath, corroded spongy Gums, black, blue and fallow Spots, sordid, dark, livid, fungous Ulcers, Gangrenes, &c. and such *Scorbutics* frequently fall into petechial Fevers, bloody Dysenteries, Hæmorrhages, &c. What is mentioned by the Rev. Mr. *Walter*, in Lord *Anson's* Voyage, is very surprising, viz. that the Blood burst forth from the Wounds of some of the *Scorbutics*, after they had been *cicatrised* for twenty or thirty Years.—I have known many a Ship's Company set out on a Cruize in high Health, and yet in two or three Months return vastly sickly, and eaten out with the Scurvy, a third Part of them being half rotten, and utterly unfit for Service.—About four or five Weeks after they have been out, they begin to drop down one after another, and at length by Dozens, till at last scarce half the *Complement* can stand to their Duty:—Particularly I remember, some few Years since, from a Squadron under Admiral *Martin*, we had near 1200 Men put on Shore sick at one Time, tho'

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tho' they went out very healthy, and returned in about twelve or thirteen Weeks *.

Those who accustom themselves to take largely of volatile and fixed alcalious Salts, Spices, and Aloetics, are always subject to these Maladies.—Not a few of those, who took the *alcalious saponaceous Hotch-potch of Mrs. Stephens*, and the *Soap Leys*, for a long Time together, fell into hectical Heats, a hot Scurvy, Hæmorrhages, Dysentery, &c.—A remarkable Instance of this lately happened to a Gentleman of the *West of Cornwall*, who for several Years had laboured under a Stone in his Bladder:—He was originally of a tender Constitution, and had taken the *Lixivium*, &c. for several Weeks, till at length his Gums began to grow exceeding spongy, inflamed and livid, at last extreemly sore and putrid, insomuch that the Flesh might be pulled off with the greatest Ease; they bled considerably on the least Pressure, and a thin bloody *Ichor* continually leaked off from them.—Livid Spots also appeared on him, and his Legs, and Thighs especially,

* Upon this I drew up a Proposal for preventing the Scurvy among the Sailors, which I communicated to several Captains and Surgeons of the Men of War. This I afterwards published in the General Evening Post in Octob. 1747, which was re-published in the Gentleman's Magazine, &c. for Octob. 1747.—As it hath since been tried with Success, both in the Men of War and Privateers; and, as I am fully convinced of its Usefulness, I again recommend it. See Page 259.

became

became vastly sore, and of a Claret Colour, or rather more livid, so that a Mortification was feared.—Upon this I was consulted for him by Mr. *Hingston*, a very skilful *Apothecary of Penryn*, who stated his Case. — Apprehending an *alcalescent*, putrid State of the Humors, and a Dissolution of the Blood from the Course he he had gone through, and the Symptoms he now laboured under, I advised the Decoction and Extract of the *Bark* with *Elixir Vitrioli*, and subacid Drinks and Diet ; which soon took off the Inflammation, Sponginess, and Bleeding of his Gums, and prevented the further Advance of the livid Colour of his Thighs, &c. which in a few Days disappeared. — About some two or three Weeks after, a copious Eruption of red, firey Pustules broke out upon him, which seemed to promise some Advantage : — However, being reduced exceeding weak by a Complication of Disorders, and a confirmed Hectic, he died quite tabid about a Fortnight or three Weeks after. — A very large Stone was taken out of his Bladder after his Death, of the Shape of a Pear, weighing 3viii 3ss Avoird. the smaller End lay towards the Neck of the Bladder.

It unquestionably appears from Experiments made on the Urine of those, that have taken pretty largely of the *Lixivium*, or Mrs. *Stephens's* Medicines, that the Urine becomes al-

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calious,

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calious *, and of Course the Serum of the Blood likewise, from whence it was secreted.— This is indeed a very strong Argument in Favour of the *lithontriptic*, or *dissolvent* Power of the Medicines ; as they have undoubtedly this Effect on human *Calculi*, when macerated in them, out of the Body. — But I think, at the same Time, it gives us just Reason to suspect very dangerous Consequences from a long Use of such Things ; especially in some tender Constitutions.

It is well known, that volatile-alkali Salts mixed with the Blood, when just drawn, or rather as it runs from the Vein, keep it from coagulating, and hinder it from separating into *Craffamentum* and Serum, as usual : The Experiment is easy, and every one will find it true on Tryal. This very adequately resembles the Blood drawn from the bleeding Scorbutics, and also from most Persons that labour under putrid petechial Fevers, when the Blood is drawn very early in the Disease.

All Humors of the Body, actually putrefied, become a strong Alkali, and putrid Blood loses its Consistence, and soon after its Colour, running into a yellowish dark-coloured *Sanies* — The Blood drawn in some greatly putrid, petechial Fevers hath had this Appearance, and been ob-

* See the Experiments of Dr. Hartley—Rutty. Monf. Morand, &c. on this Matter.

served actually to stink as soon as drawn *, as well as the Urine as soon as made ; so far was the Putrefaction advanced whilst even Life was still subsisting. The surprisingly great, and speedy Corruption of Bodies, dying of pestilential Fevers with Spots, shews this likewise : I have known such a *Corpse air* † as much, as they call it, in seven or eight Hours, as dead Bodies commonly do in seven or eight Days, and to leak out a most putrid *Sanies* from all the Outlets of the Body : — Which, by the bye, is a Reason why Persons, dying of such Fevers, should be buried very soon.

Some Kinds of Poisons, as particularly the *Bite* of a *Viper*, and some other venomous Animals, bring on a very sudden Corruption and Dissolution of the Blood, and turn it into a yellowish *Sanies* : *Pestilential Effluvia* also soon destroy the *Crafsis* of the Blood, and produce an universal gangrenous Disposition in the Humors. This is evident from the frequent and fatal Hæmorrhages, excessively foetid Sweats, Vomitings and Stools, and the general *Necrosis* that follows, which have been observed in the Plague, and pestilential Fevers, by the best Authors ‖. — The Hæmorrhages in particular

* *Vid. Vander Mye de Morbis Bredanis—Morton, Pyreolog. Prolegomen. p. 26.*

† *De Aere & Morb. Epidem. Vol. I. Martij 1735.*

‖ *Particularly Diemerbroek, Hodges, and the Authors in Traité de la Peste fait par Ordre du Roy, Paris 1744. 4to.*

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are often vastly profuse and obstinate in the Plague; and I have many Times noted the same in pestilential and petechial Fevers; and the Blood, thus issuing, doth not coagulate * as usual: — All Arguments of the highest Acrimony and Dissolution of the Blood.

The Contagion of the Small-pox seems to affect some Constitutions much in the same Manner, producing Spots, Putrefaction, and vast Effusions of Blood from several Parts of the Body, sometimes even at one and the same Time. — I have seen many Instances in this Disease, where, within four or five Days from the Seizure, Purples have appeared all over the Body, and Hæmorrhages from several Parts in a profuse Manner; particularly the *Uterus*, urinary Passages, and Nose; and the Pustules have turned quite black, a *bloody Ichor* issuing from them in Abundance; and this too where no violent Symptoms of any Kind had preceded. — Little Miss R—n, about five Years old, had such a Kind about fourteen Years ago; they came out with scarce any considerable Fever, Pain, Sickness, or the like, yet Spots appeared at the same Time very large, livid and black. — The Pox were but few, some of which about the Lips, internal Parts of the Cheeks, and Tongue, turned very black, and bled pretty largely. — The Child was often taken

* *Traité de la Peste, Part I. p. 343.*

with

with a slight *Deliquium*, and forthwith would return to her Play-things as before. — At length she brought off pretty much florid Blood, and some black and coagulated, by Stools, and sunk away insensibly as it were into the Arms of Death, about the ninth Day from the Attack of the Disease.

I lately saw a dreadful Case of this Kind in Miss B—y, a young Gentlewoman, who had much fatigued herself in very hot Weather, immediately before the Seizure with the Small-pox, by walking, riding, dancing, &c. — She had Millions of *truly small Pox*, and a vast Number of black and blue Spots, that broke out all over her Body the third Day inclusive from the Seizure, and her Legs and Thighs appeared quite purple; she bled at the Gums and Nose very largely, and yet at the same Time had a very profuse Discharge of the *Catamenia* about six Days before the regular Period.— She died the sixth Day from the Attack:— She had from first to last an inexpressible Load at her Breast, with vast Anxiety, frequent Faintings, and a vastly quick, fluttering, small Pulse.

It is always a fatal Prognostic, when Spots and Hæmorrhages appear at the very Eruption of the Small-pox, and the Sick seldom, or never, survive the ninth Day of the Disease; the Blood running into immediate Dissolution and

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Putrefaction. I am persuaded, scarce one in a thousand recovers under these dreadful Circumstances ; especially if the Spots are very livid, black and numerous.—If any Thing is to be done in these deplorable Cases, it must be by timely and duly administering *Acids*, the *Bark* and *Astringent Alexipharmacs* ; which certainly have oftentimes exceeding good Effects in petechial Fevers attended with Hæmorrhages.—Dr. *Mead*, in his late elegant Treatise *De Variolis & Morbillis* *, hath given us Reason to hope for Success by the Use of these Medicines in the bleeding and petechial Small-pox, and also the Method of exhibiting them.

This dissolved State of Blood also often happens in putrid malignant Fevers, arising frequently from *Contagion* ; but is sometimes the mere Effect of a Fever seizing Persons of an *acrimonious* State of the Blood and Humors, which is the Case of the *highly scorbutic* : The former acting in an analogous Manner to the Poison of the Viper on the Blood ; the latter by the Power of the *saline Spicula* on the Blood-globules, which is now greatly encreased by the febrile Motion and Effervescence of the Blood. Thus an inflammatory Tumor in Persons of a good, sweet, sound Constitution suppurates into a *kindly laudable Matter* ; in a very sharp State of Humors it turns either into a *gangre-*

* Cap. iii. *De variolarum curationibus.*

nous Sanies, or cancerous Ichor. What the Action of animal Heat and Motion will do, on the Salts of the animal Humors, may be seen in the Case of those that die of Famine: for take the soundest Person, and deprive him of all liquid and solid Aliment, the Salts become continually more and more acrimonious; till at length a Fever, Delirium, &c. are brought on by their great Irritation, which soon ends in universal Putrefaction and Death. — You may see how this Putrescence of Humors advances by taking a *healthy Nurse*, whose Milk, for some Hours after eating, is white, thin, sweet, and grateful; let her fast for sixteen or eighteen Hours, it becomes thick, yellow, salt, and disagreeable: Let her further abstain for some few Hours longer, it turns of a much deeper yellow, nauseous and even stinking; and all this much more so, if she happens to labour under a Fever, a bloody Kind of Matter issuing instead of Milk. — If this happens to the most acescent and sweetest Humor of the Body, what think you happens to the Bile, Lymph, &c?

Where the Heat and Attrition of the Blood are very considerable, its Putrefaction advances surprisngly fast. — It appears from * *Boerhaave's* Experiment on a Dog, shut up in a hot Sugar-

* *Vide Boerhaavii Chem. Cap. de Igne, Experiment. xx. Coroll. 16.*

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baker's Stove, that the whole Mass of Humors was corrupted to so high a Degree, in a few Minutes, as to give off an insupportable Stench; and so dissolved, that the very *Saliva* became bloody; and so horribly offensive, as to throw a strong Man, concerned in the Experiment, into Faintings.

The animal Humors naturally run into Dissolution and Putrefaction, unless prevented and corrected by daily Supplies of *acescent Aliment*; a Diet merely of Flesh, Fish, Spices, and Water, will very soon bring on a putrid Fever. — *Bread* is not only the *Staff of Life*, as Nourishment, but as it also corrects, by its *acescent Quality*, the rank Juices of animal Flood. — The *Spanish* and *French Prisoners here*, by eating unusual and immoderate Quantities of Flesh, brought on such dangerous Fevers as carried off vast Numbers of them. — They were so fond of it, that they died, as it were, with Flesh in their Mouths frequently.

But thus much for the Generation of *alcalescent Acrimony* in the Blood: Let me add, that it seems to appear, from what is above said, that, in some Cases, the animal Salts are rendered actually alkaline, volatile, corrosive, and destructive of the Blood-globules, as well as the *minima Vascula*, while even Life subsists. — When the animal Oils are also highly exalted and rancid, they unite with these Salts, and make

make a most destructive dissolving *Sapo*, much of the Nature of putrid Bile, which corrodes and dissolves all the Principles of Life.

Now, as, on the one Hand, an *acrimonious State* of Blood may be complicated with too tense rigid Fibres, and an *inflammatory Lensor*; so, on the other, it may consist with a *thin dissolved State* of Blood and *weak lax Fibres*.

Let us put Contagion for Acrimony, (for it acts in a like Manner, and eventually proves so) and we have the Cases very justly exemplified in the Small-pox: Where the Disease is sometimes attended with a very viscid State of Blood, high inflammatory Fever, violent acute Pains, peripneumonic Symptoms, Phrenzy and the like: Sometimes on the contrary with a weak, dissolved Blood, a low slow Pulse, or a weak and quick one, nervous Symptoms, thin crude Urine, various and profuse Hæmorrhages, little or no Pain, Swelling, Soreness, or the like. In the former Case the Fever runs too high, and burns up the Patient; in the latter there is not Fever enough to make a compleat Protrusion and Maturation of the Pustules, but they remain sessile, crude and undigested; whence at last the whole Mass of Blood runs into a putrid corrosive *Ichor*, or a gangrenous *Sanies*.

Take another View of this Matter. — I have many Times known *pulmonic*, or *pleuro-peripneumonic* Fevers attack Persons of a very thin acrid State

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State of Blood, which have been attended with a very considerable Degree of Inflammation.— This happens very frequently to scorbutic seafaring Persons.

In the Years 1740 and 1745, Abundance of People were seized with Shivering, then great Heats, Fever and Difficulty of Breathing, importunate laborious Coughs, very acute darting Pains of the Breasts, Sides and Back, and frequently also in the Head and Temples. They had oftentimes a very quick, hard Pulse, but *concentrated* as it were; the Breath was very hot and offensive, and the Matter they expectorated was sometimes thin and crude, and sometimes as yellow as Saffron; but much more commonly a thin, gleety bloody Matter, frequently very foetid, and sometimes so acrid as to cause a great Hoarseness, and Soreness of the Wind-pipe and Throat, and sometimes Excoriations of those Parts. The Blood drawn from them was either of a darkish livid Colour, covered over with a lead-coloured or greenish thin Film, or sometimes quite florid (particularly on the first Bleeding) but of a loose, soft Consistence when cold; the specious Appearance often surprising the Surgeon, or Apothecary, who expected quite another Appearance of the Blood, considering the Symptoms. However in many of these Fevers, the Blood drawn was covered over with a pretty thick tough Coat,

Coat, not of a whitish yellow Colour, as usual in common pleuritic or pleuro-peripneumonic Blood, but of a Colour approaching to that of a *Cornelian Stone*, or a little more dilute than that of the common Jelly of *red Currants*. — This Colour of the *Buff* on Blood I constantly observe to be of ill Omen: I conjecture because it indicates both a great Glutinosity, and also a very great Quantity of acrid Salts in the Blood, which break its Globules, and put it into a putrid dissolving State; for this Appearance seems to arise from the broken Globules inviscated by the inflammatory Size. If a Portion of volatile-alkali Salt be mixed with the Blood of a Person in a high Pleurisy, as it runs off from the Vein, the upper Part of the *Craffamentum* will greatly resemble that of the Blood, which I have just mentioned: And it is further remarkable, that the *Serum* of such Kind of Blood hath very often a *bloody Tinge*, almost as high as *Burgundy Wine*; and so indeed frequently had the *Serum* of the other Kinds of Blood, tho' many Times it appeared only of a turbid yellow Colour. The Urine was commonly very high, and sometimes dark-coloured with a Kind of lead-coloured Sediment; it was generally rendered in small Quantities. Faint, uncertain, partial Sweats often attended, particularly about the Face and Head; although many

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many Times, towards the fatal Period, they were very profuse and colliquative. Livid, or black Spots frequently appeared about the State of the Disease, and I think seldom, or never, failed of being the certain Harbingers of Death. The black and brown Thrush, which also sometimes broke out towards the Clofe, were not of a much more favourable Prognostic. But an universal, burning, itching Rash sometimes terminated the Fever; and sometimes it ended in an Eruption of very large, angry, ulcerating Pustules on the Neck, Shoulders and Arms, but more especially about the Nose and Lips.

But of this Kind of peripneumonic Fever more hereafter, with the Method of treating it. — I shall only at present take Notice, that at the same Time when this malignant Peripneumony, if I may so call it, reigned in *Plymouth*, and its Neighbourhood, Pleurifies, Peripneumonies, and Pleuro-peripneumonies were everywhere epidemic, and generally of the true inflammatory Kind, arising from the cold dry northerly and easterly Winds, which had for a long Time prevailed. — In these the Blood was very dense and fizy, and most commonly covered over with a very thick, white, or yellowish Buff; and the Sick bore the Loss of Blood well and to Advantage, even to forty Ounces, or upwards sometimes: Whereas the Blood, in
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the *malignant pulmonic Fever*, was as I have above described it ; and, when it was considerably buffy, it had the *above-mentioned Appearance*, and the Patients often sunk surprisingly after the first or second Bleeding ; sometimes indeed to my great Concern and Astonishment ; when, from the hard Pulse, great Load at Breast, pungent Pain of the Side, and Severity of the Cough, I thought I had sufficient Warranty for advising it.—Besides, tho' *these latter* expectorated pretty large Quantities of crude and thin, or more frequently of a gleety bloody Matter, they were not at all relieved ; whereas when the *former* spit off largely and freely, it was of the highest Advantage.

Now I must further take Notice, that, *contemporary with both these Disorders*, a *contagious, putrid, petechial Fever* was very rife in and about this Town ; especially among the Sailors and Prisoners, and those that were very conversant with them ; and it was chiefly among those Sorts of Persons, that the *malignant pulmonic Fever* raged.—So that this seemed to be a Complication of the common inflammatory Peripneumony with the contagious petechial Fever : the *contagious Effluvia* acting on the Blood in the Manner of *acrimonious Salts*, and destroying its *Crafs*. — It is certain we frequently meet with Peripneumonies of this Kind, merely from the sharp acrid State of the Humors of those that are seized with them.

Now

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Now these are Fevers, in which an inflammatory Lensor is complicated with a great Degree of Acrimony, or blended with a Kind of poisonous dissolving *Effluvia*. — But we often meet with others, in which a very high Acrimony of the Humors is combined with a *too lax State* of the Vessels, and *too loosely compacted Blood-globules*; which is the Case very commonly in petechial Fevers, especially such as are attended with Hæmorrhages.

I here beg Leave to give the History of such an one, which I think was the severest, that ever any Person suffered under, who survived the Disease: — And the rather, as I shall specify the Method of his Cure; which not only in his Case, but in several others of the like Nature, tho' not Degree, I have experienced to be highly beneficial; and which, I am persuaded, is the only successful Course that can be used in them, however different it may seem from the common Practice.

An eminent Surgeon of a neighbouring Town, of a thin and somewhat tender Constitution, but constantly used to Action and Exercise, and frequently subject to Fevers, and scorbutic Rheumatisms, from taking Cold, &c. in *October 1741*, fell into a Kind of slow Fever, attended with slight Rigors, frequent Flushes of Heat, a quick weak Pulse, Loss of Strength and Appetite, with a great Load at his Breast,

Breast, and a heavy Sort of Respiration.—Notwithstanding this, he continued in his Business, constantly riding, and fatiguing himself for some four or five Days after this Seizure.—I met him at a Gentleman's House, who was my Patient ; and finding him as above, and that his Breath was, even then, very offensive, I earnestly desired him to take timely and due Care of himself.—Two Days after, he, being at a Gentleman's in the Neighbourhood, was taken all on a sudden with a very great Faintness, and fell off his Chair : Upon lifting him up the Company observed several livid and violet-coloured Spots on his Arms and Neck. It was with very great Difficulty they got him Home, tho' but two or three Miles Distance, he very frequently fainting by the Way.—The Disorder encreased every Moment, he had a vast Langour with Pain and extream Oppression on the Præcordia, and a perpetual Sighing ; —his Breath now stank abominably, and a foetid bloody Matter leaked continually from his Gums, and thousands of livid, violet and black Spots appeared all over his Body, on the Trunk, as well as the Limbs.

He was bled to about 3xii from his Arm, but this gave him no Manner of Relief, the Oppression, Sighing, Fainting, and Anxiety continuing as bad as ever, nay rather encreasing ; — a violent Hæmorrhage also broke forth
from

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from his Nose ; which continuing from both Nostrils, he was bled again to $\frac{3}{4}$ about twelve Hours after the former Bleeding: — neither did this give him any Relief, but encreased his Weakness considerably, and he continued as anxious, restless, and oppressed as ever, without even the least Sleep. The Blood now not only issued from his Gums and Nose, but he also coughed up Blood.—Indeed the Bleeding from his Nose had ceased somewhat, but it encreased from his Gums, and in a surprising Manner Blood now likewise dropped, tho' slowly, from the Caruncle of one of his Eyes ; and several livid Pustules on his Tongue, and within his Lips, broke, and discharged a bloody, thin Matter very copiously.

The Hæmorrhage being somewhat restrained, a bloody Dyfentery came on with severe Gripes, and excessive Faintness, and he was still exceeding restless and very feverish : his Pulse now intermitted every sixth or eighth Pulsation, and then fluttered on again vastly quick ; he had likewise a constant *Tremor* and *Subsultus*.—The Hæmorrhage all this while continued from one Part or other, and when stopped at one Place forthwith burst out at another ; so that his Urine now seemed tinged with Blood, being very dark-coloured, nay almost black. Soon after he was bled the second Time, I was sent for, and hastened to him.—I found him in the Man-
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ner described, under an inexpressible Anxiety, yet quite free from a Delirium, though he had no Manner of Sleep for several Days and Nights: His Tongue was vastly black, and his Breath so insufferably stinking, that it was greatly offensive even at a considerable Distance; and his Stools were so horribly nauseous and foetid, that the very Nurses fell into Vomiting and Faintness in carrying them off.

I found that neither of the Portions of the Blood that had been drawn (not even the first) had separated into *Craffamentum* and *Serum* as usual, tho' the former had stood so many Hours; but continued as it were half coagulated, and of a bluish livid Colour on the Top:—it was most easily divided by the slightest Touch, and seemed a *purulent Sanies* rather than Blood, with a Kind of a *sooty Powder* at Bottom. His Hæmorrhage still continued, especially from the Tongue, Lips and Gums, with a perpetual Dripping of thin bloody Ichor from his Nose; so that he was reduced to an extream Degree of Weakness, with never-ceasing Tremblings, *Subsultus Tendinum*, and almost continual Faintings.

What was to be done in this dreadful Case? Would the hot, alexipharmac, volatile Cordials and Blisters have served him, as some might have imagined, considering his extream Weakness, Faintings, Load on the Præcordia, Trem-
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blings,

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blings, &c. But would they not have been certainly *deleterious*, would they not have certainly killed him? as they would have added to the stimulating Acrimony, encreased the Fever, and further destroyed the *Crafs* of the Blood, already nearly quite dissolved, and reduced to a Kind of *putrid Gore*.

I took it in this View, and, as I had experimentally and repeatedly known the great Use of the *Bark* * in preventing and stopping the Advance of Gangrenes, I gave him frequently of it in small Doses with *Elixir Vitrioli*, premising a small Quantity of *Rhubarb*.—Besides this he drank Tincture of Roses, with Cinnamon Water, made very acid, and also a Decoction of *Sevil* Orange Rind, red Roses, Cinnamon, and a little *Japan* Earth (as it is called) well acidulated; Claret, and red Port, with about half Water, he drank at Pleasure.—As the *Bark* sat easy with him, I continued its Use, and encreased its Quantity, giving with it some *Confect. Fracast. sine melle* to restrain the dysenteric Flux;—and yet I now and then interposed a small Dose of *Rhubarb*, to carry off any bloody, bilious, or sanious Matter that might be lodged in, or leak into the Intestins. In the mean Time I ordered him to be

* Besides I had formerly given the *Bark* with Success in the malignant petechial Fever of 1735: *Vid. Obs. de Aere et Morb. Epidem. Mense Maio.*

frequently

frequently supported with Rice, Panado, Sago, Jellies of Harts horn well acidulated, Toast out of Claret, or red Port Wine; and I directed Fomentations of Aromatics and Astringents, boiled in red Wine, to be frequently applied to the whole Abdomen.

By this Method, steadily persisted in, was this poor Gentleman, thro' divine Goodness, raised from a State of universal Rottenness, as it were, to perfect Health: Not but that, for a very considerable Time after his Fever was quite gone off, he continued extreamly weak; and even after he was capable of walking abroad, the Hæmorrhage from his Nose would return on the least Occasion, his Gums would bleed on the slightest Rubbing, and his Breath continued very offensive for a long Time.—By the further Use of the *Cortex*, *Elix. Vitricli*, &c. this also intirely ceased:—But his Legs and Feet continued very much swoln for a much longer Time, and his Flesh all over the whole Body remained exceeding soft, tender, and sore, scarce bearing the least Touch.—Rhabarbarate Purges, easy stomachic Chalybeates, Elixir of Vitriol, *Pyrmont* Water with proper Diuretics, and gentle regular Exercise, at length carried off all those Symptoms; and in about two or three Months he recovered a good State of Health, which he still enjoys.

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I met with several of these petechial Fevers, with Hæmorrhages, in the Summer and Autumn of 1745; particularly a Gentlewoman, of *Anthony* near *Plymouth*, was seized with such a Fever, with Symptoms nearly resembling those in the above-mentioned Case, tho' not in so high a Degree.—She fell into an immense Discharge from the *Uterus*, tho' out of Season, after a very profuse Hæmorrhage from the Nose; she bled also from the Gums, and at last had a bloody Dysentery: She had a strong Phrenzy before the Bleeding from the Nose came on, and had a vast Number of purple and black Spots all over her Body, some as large, at least, as a Silver Penny.—I treated her exactly in the Manner aforesaid, and she happily recovered; tho' her Legs were greatly swoln after it, and she continued in a long State of Weakness.—She was twice bled before I saw her;—the first Blood I saw not, but Mr. *Freke*, her Surgeon, told me it was very florid and rich (as he called it) but very soft, and gave off a very small Quantity of a reddish *Serum*: I saw the second, which was of a very dark black Colour, covered with a very thin, tender, greenish Skin.—Her Urine, during the whole Time of the Fever almost, was like white Wine, or Cyder, that stands long exposed to the Air, and turns black; at length however a Kind of a dark-coloured mealy Sediment was deposited.

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The Fever, which attends Gangrenes, is commonly of this Kind, corrupting and dissolving the Blood ; the sanious Matter of the gangrened Part, being resorbed into the Mass of Blood, produces an universal gangrenous Disposition in the Humors, and dissolves the sound red Globules ; whence Spots, Hæmorrhages, black Tongues, Delirium, &c. supervene. *Celsus* * justly observes that an acute Fever, Delirium, great Thirst, and stinking Breath, accompany a Gangrene ; all Signs of Corruption of the Blood and high Acrimony.—I will instance but in one Case, which, I think, is pretty uncommon in several Circumstances.

Mrs. *Elisabeth S—th* of *St. Germans in Cornwall*, about twenty-five, of a weak Constitution and bad Habit of Body, who never had any regular *Catamenia*, was taken at the latter End of *May*, 1742, with a Pain in the right Foot near the Toes and with a *Torpor* all over the Leg ; which hourly encreasing, she sent for Mr. *Dyer*, an ingenious Surgeon of *Looe*, who rubbed the Part with camphorated Spirit of Wine, and gave her some nervous and cordial Medicines.—This having no Effect, he fomented with a very warm aromatic Decoction, applying the *Magma* with Spirits, *Theriaca*, &c. to the Leg and Foot ; notwithstanding which

* *Lib. V. Cap. 26.*

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the Parts grew soon discoloured, cold and quite insensible.—When I came, I ordered the Parts to be scarified, and that deeply, but not the least Blood issued, only a few Drops of quite black Blood here and there slowly rose up, of the Bigness of a Pea ;—the Skin and Flesh looked as if the Leg had been cut off for some Days, tho' this was but in the Forenoon of the *fourth Day* from the very first Seizure.—There were no Vesications, nor did the Scarifications afterwards emit the least Stench, Matter, or *Sanies*.—I immediately ordered her the *Bark* with *Elixir Vitriol. Confect. Ralegh.* and a warm acidulated Julep, which she took freely, as she was vastly faint.—A violent Pain seized her in the Afternoon in her right Thigh and Groin, and forthwith a Fever, severe Gripings, and a bloody Flux, came on, which presently reduced her to the utmost Degree of Weakness, with perpetual Faintings and Agonies.

The ensuing Night she grew very delirious, her Tongue became quite black and faltering, her Pulse exceeding quick, weak and fluttering, with continual Catchings of the Tendons and Tremors.—As the *Cortex* did not sit well, but ran down, I gave her a strong Tincture of it with *Decoct. Fracastor. Elix. Vitriol. &c.* which had a much better Effect.

In this miserable Condition she continued for three or four Days, every one about her
hourly

hourly expecting her Death ; however the *Sphacelation* did not advance, and never appeared above the Knee, tho' a very vehement Pain affected the whole Thigh, and seemed chiefly in the *Periosteum* of the Bone.—At length there appeared a dark, livid *Streak* or *Line* all round the Limb, immediately under the Knee, and pointed out where Nature was disposed to separate the dead Part from the living. This Tendency to Separation became every Day more and more visible, and the Surgeon used all proper Means to promote it : For whatever Foundation there might have been for an *Amputation*, neither she, nor her Friends, would admit of it.—In these deplorable Circumstances (the dead Part of the Limb daily rotting off from the sound) she continued till *July* the 14th ; when the Surgeon, finding the *Slough* cast off, and a Separation at the Joint almost perfectly made, took off with a Knife the dead Leg from the sound Thigh, at the *very Articulation*, with very little Pain, without her Consent, and almost without her Knowledge of it, when it was done.—Soon after this she daily recovered, and by proper Diet, and Medicines, was in a little Time restored to a tolerable State of Health.

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C H A P. VI.

Of the Difference between a slow nervous, and a putrid malignant Fever.

I Cannot conclude this Essay on Fevers, without taking Notice of the very great Difference there is between the *putrid malignant*, and the *slow nervous Fever*; the Want of which Distinction, I am fully persuaded, hath been often productive of no small Errors in Practice, as they resemble one another in some Respects, tho' very essentially different in others.—And this I the rather do now, as I have not sufficiently noted the Difference in my *Dissertation de Febris lentis & nervosis*.—Nor do I know of any Author, that hath done it explicitly, besides Dr. Langrish in his *Modern Theory and Practice*.

By what hath been said above, I think, it evidently appears, that in putrid malignant and petechial Fevers the *Blood, peculiarly so called*, is affected; whereas the slow nervous Fevers seem to have their Seat chiefly in the *lymphatic and nervous Juices*. Corruption of the Humors and Dissolution of the Blood are in a high Degree observable in the former; but the slow nervous Fever frequently runs on to a great Length of Time, without any considerable Signs of Putrefaction.

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Besides, these two different Kinds of Fevers may be artificially produced, if I may so speak, by too very different Kinds of Diet, Regimen, &c. and is too often actually effected. The hot, acrid, saline, volatile and spicy Food, and Medicines, very hot Air, &c. will produce a putrid malignant:—On the contrary, cold, watery, slimy, mucilaginous Things, as Cucumbers, Melons, crude trashy Fruit, vapid Liquors, damp cold Air, &c. bring on slow nervous Fevers.

Could we suppose both the one and the other to arise from Contagion, (which is commonly the Case in pestilential and petechial Fevers, and may sometimes be so in the slow nervous) I should liken the Action of the *morbific Effluvia* in the former, to that of the Poison of a Viper, which immediately affects and destroys the Texture of the Blood-globules, and brings on a very speedy Corruption:—But in the latter to the *Virus* of a mad Dog, which works but slowly, and seems primarily to affect the *Lymph*, and *Succus nervosus*, and manifests no Signs of Putridity, at least till the very Close of the Tragedy.

Now as these two Fevers have a very different Origin, they cannot but shew their Effects in different Symptoms, and require a very different Method of Cure;—and yet, I am very sensible, the one may be, and very often is, blended

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ed with the other : I mean, that a very acrimonious State of Blood may subsist under a very weak relaxed System of Vessels, and may not shew itself with so much Violence, as if the moving Powers and Vessels were more strong and elastic, and much more susceptible of the *Stimulus* of the morbid, acrimonious Salts, &c. and of Course more slow in its Progress, tho' perhaps equally fatal.—The different antecedent State of the Fibres, and Powers of Nature, where Contagion is the proximate Cause of the Disease, both undoubtedly alter the Nature of the subsequent Fever very greatly.—By carefully describing both these Fevers, their Nature and Difference will more fully appear.

C H A P. VII.

Of the slow nervous Fever.

I Begin with a Description of the slow nervous Fever, which hath been very exactly taken from too many, who have fallen Victims to this insidious and dangerous Enemy.

The Patient at first grows somewhat listless, and feels slight Chills and Shudders, with uncertain sudden Flushes of Heat, and a Kind of Weariness all over, like what is felt after great Fatigue. This is always attended with a Sort of Heaviness and Dejection of Spirit, and more or less

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less of a Load, Pain, or Giddiness of the Head ; a *Nausea* and Disrelish of every Thing soon follows, without any considerable Thirst, but frequently with urging to Vomit, tho' little but insipid Phlegm is brought up.

Tho' a Kind of lucid Interval of several Hours sometimes intervenes, yet the Symptoms return with Aggravation, especially towards Night : The Head grows more heavy, or giddy, the Heats greater, the Pulse quicker but weak, with an oppressive Kind of Breathing.—A great *Torpor*, or obtuse Pain and Coldness affects the hinder Part of the Head frequently, and oftentimes a heavy Pain is felt on the Top all along the *coronary Suture* ; this, and that of the back Part of the Head, generally attend nervous Fevers, and are commonly succeeded by some Degree of a Delirium.

In this Condition the Patient often continues for five or six Days, with a heavy pale sunk Countenance, seeming not very sick, and yet far from being well ; restless, anxious, and commonly quite void of Sleep, tho' sometimes very drowsy and heavy : but although he appears to those about him actually to sleep, he is utterly insensible of it, and denies that he doth so.

The Pulse, during all this Time, is quick, weak and unequal, sometimes fluttering, and sometimes for a few Minutes slow, nay intermitting ;

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mitting; and then, with a sudden Flush in the Face, immediately very quick, and perhaps soon after surprisingly calm and equal; and thus alternately.—The Heats and Chills are as uncertain and unequal, sometimes a sudden Colour and Glow in the Cheeks, while the Tip of the Nose and Ears is cold, and the Forehead at the same Time in a cold dewy Sweat.—Nay it is very common, that a high Colour and Heat appear in the Face, when the Extremities are quite cold.

The Urine is commonly pale, and often limpid, frequently of a Whey-colour, or like vapid Small-beer, in which there is either no Manner of Sediment, or a Kind of loose Matter like Bran, irregularly scattered up and down in it.—The Tongue, at the Beginning, is seldom or never dry or discoloured, but sometimes covered with a thin whitish *Mucus*;—at length indeed it often appears very dry, red, and chapped, or of the Colour of Pomegranate Rind; but this mostly at the State, or Close of the Disease: yet, however dry the Tongue and Lips seem, the Patient scarce ever complains of Thirst, tho' sometimes of a Heat in the Tongue.

About the seventh or eighth Day the Giddiness, Pain, or Heaviness of the Head, become much greater, with a constant Noise in it, or *Tinnitus Aurium*, which is very disturbing to the

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the Sick, and frequently brings on a Delirium. The Load on the Præcordia, Anxiety and Faintness grow much more urgent, and they often fall into an actual *Deliquium*; especially if they attempt to sit up: Coldish Sweats suddenly come on in the Forehead, and on the Backs of the Hands (tho' at the same Time there is too much Heat in the Cheeks and the Palms) and as suddenly go off.—If the Urine now grows more pale and limpid, a Delirium is certainly to be expected with universal Tremors and *Subsultus Tendinum*; the Delirium is seldom violent, but as it were a Confusion of Thought and Action, muttering continually to themselves, and faltering in their Speech: Sometimes they awake only in a Hurry and Confusion, and presently recollect themselves, but forthwith fall into a muttering, dozy State again.

The Tongue grows often very dry at the State, especially in its middle Part, with a yellowish Lift on each Side, and it trembles greatly when the Sick attempt to put it out.—When the Tongue at this Time grows more moist, and a copious Spitting comes on, it is always a very good Sign:—But where a Difficulty of swallowing, continual *Gulping*, or *Choaking* in the Throat supervene, it is a very dangerous Symptom, especially if attended with any Degree of a *Singultus*.

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Frequently profuse Sweats pour forth all at once about the ninth, tenth, or twelfth Day, commonly coldish and clammy on the Extremities ; oftentimes very thin Stools are discharged ; both the one and the other are generally colliquative and very weakening.—However a warm Moisture of the Skin is generally salutary, and a gentle Diarrhœa frequently carries off the Delirium and comatose Disposition.

Now Nature sinks apace, the Extremities grow cold, the Nails pale or livid, the Pulse may be said to tremble and flutter rather than to beat, the Vibrations being so exceeding weak and quick, that they can scarce be distinguished ; tho' sometimes they creep on surprisngly slow, and very frequently intermit. The Sick become quite insensible and stupid, scarce affected with the loudest Noise, or the strongest Light, tho' at the Beginning strangely susceptible of the Impressions of either. The Delirium now ends in a profound *Coma*, and that soon in eternal Sleep.—The Stools, Urine, and Tears run off involuntarily, and denounce a speedy Dissolution, as the vast Tremblings and Twitching of the Nerves and Tendons are Preludes to a general Convulsion, which at once snaps off the Thread of Life.—In one or other of these Ways are the Sick carried off, after having languished on for fourteen, eighteen,

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teen, or twenty Days; nay, sometimes much longer.

All Persons grow deaf and stupid towards the End of the Disease (some extreamly deaf) tho' too quick and apprehensive at the Beginning, insomuch that the least Noise, or Light, greatly offended them.—Many, from their immoderate Fears, seem to hurry themselves out of Life, where little Danger was apparent at the Beginning; nay several will not suffer themselves to sleep, from a vain Fear of dozing quite away; and others from the vast Hurry, Anxiety, and Confusion, they are sensible of in it, or at their awaking.—Where the Deafness ends in an Impostume of the Ear, it is generally a good Symptom; and so it is also when a *Parotis* suppurates, or a large pustular angry Eruption breaks out about the Lips and Nose.

This is a Description (tedious indeed, but pretty exact) of the slow nervous Fever in its most aggravated Circumstances:—Wherein I have laid down the Symptoms in the Order in which they naturally come on;—and this I think should be always observed in describing any Disease.—It most commonly attacks Persons of weak Nerves, a lax Habit of Body, and a poor thin Blood; those who have suffered great Evacuations, a long Dejection of Spirits, immoderate Watchings, Studies, Fatigue,

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tigue, and the like ; and also those, who have used much crude unwholesome Food, vapid impure Drinks, or who have been confined long in damp, foul Air ; that have broken the Vigor of their Constitutions by Salivations, too frequent Purging, immoderate Venery, &c.—Whence I think it is evident, this Disease arises from a too relaxed State of the Solids, a poor weak Blood, and a *Lentor and Vapidity of the lymphatic and nervous Juices*:—The very Method of Cure shews this, which consists in mild, stimulating, attenuating, and proper cordial, strengthening Diet and Medicines.—*Hippocrates* somewhere notes, that the successful Method of Cure shews the Nature of the Disease.

Let us now therefore endeavour to shew the properest Method of curing this Fever.

It was another Maxim of the great *Hippocrates*, that whoever knows the Nature of the Disease, knows the Method of Cure*.—It is at least the indispensable Duty of every Physician, before he prescribes for his Patient, to consider well his Constitution, and the Nature of his Disease ; for as *Celsus* elegantly says, *Æstimatio causæ sæpe morbum solvit* †. — And this is in no Case more necessary than in Fevers, in which the Time is short, and Experiments dangerous : Where the Disorder doth not attack with great Violence, it is better to wait a little, and ob-

* *Lib. de Arte sub finem.*

† *Celsi Præfat. sub finem.*
serve

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serve the Motions of Nature, than be too precipitant.—But it is rare, that Physicians are called in at the very Beginning of slow Fevers: Indeed they are often too far advanced, 'ere they are consulted.

From the History of the slow nervous Fever I think it is very evident, that no great Evacuations are proper (especially Bleeding) particularly in Persons of originally weak and lax Constitutions, who are by far the most subject to it.—I have known a common Purge, injudiciously given at the Beginning of this Fever, immediately followed by surprising Languors, *Syncope*, and a large Train of other ill Symptoms: However it may be necessary sometimes, even at the Beginning, to cleanse the *primæ viæ* by a gentle Puke, a little *Rhubarb*, *Manna*, &c; if you give any Thing *drastic*, be assured your Patient will rue for it, and you will repent it.—And here I cannot but observe, that a mild Vomit may be given with much less Ruffle to Nature than a common Purge, and indeed is useful, nay necessary, where Nausea, Load and Sickness at Stomach are urgent; which frequently happen at the Attack of this Fever: — Clysters of Milk, Sugar, and Salt, may be injected with Safety and Advantage every second or third Day, if Nature wants to be prompted to stool.

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The temperate, cordial, diaphoretic Medicines are certainly most proper in these Fevers ; and a well regulated, supporting, diluting Diet is necessary : The latter of itself, judiciously managed, will go a great Way in the Cure, especially assisted by well timed and well applied Blisters, and a due Care to keep the Patient as quiet as possible, both in Body and Mind. But it should be noted, that any strong *Opiates* are commonly very pernicious, however Want of Sleep and great Restlessness may seem to demand them.—Mild Diaphoretics, as *Pulv. Contrayerv. comp.* with a little Castor and Saffron, and small Quantities of *Theriac. Andromach.* or *Elixir Paregoricum*, have much better Effects : which, by raising a gentle easy Sweat, or at least a plentiful Perspiration, calm the Hurry and Tumult of the Blood and Spirits, whence soft refreshing Slumber succeeds. Where the Confusion and Dejection of Spirits are very considerable, *Galbanum*, or *Silphium*, with a little Camphire should be added ; and Blisters should be forthwith applied to the Neck, *Occiput*, or behind the Ears : and during all this a free Use of thin Wine-whey, some pleasant Ptisan, or Gruel, with a little soft Wine, must be indulged. Indeed the Patients, in this Case, should drink frequently : though such Quantities may not be necessary as in the ardent, or even putrid malignant Fevers ;

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vers; yet they should be sufficient to carry on the Work of Dilution, support the Sweats, and supply the Blood with fresh and wholesome Fluids, in lieu of the vapid, acrid *Latex*, that is continually passing off.—And I think in this View a thin Chicken Broth also is of Service, both as Food and Physic, especially towards the Decline of the Disorder; and for the same Reason thin Jellies of Hart's-Horn, Sago, Panado, are useful, adding a little Wine to them, and the Juice of Seville orange, or Lemon.

It is observable, the Sick are never so easy, as whilst they are in a gentle easy Sweat; for this soon removes the Exacerbations of Heat, Hurry, &c.—But profuse Sweats should never be encouraged, much less attempted by very strong heating Medicines, volatile alcalious Salts, Spirits, &c; especially in the Beginning, or Advance of the Fever; for they too much exhaust the *Liquidum vitale*, and are followed by a vast Dejection of Spirits, Tremors, Startings of the Tendons, and sometimes end in *Rigors*, cold clammy Sweats, *Syncope*, or a comatose Disposition.—Sometimes irregular, partial Heats and Flushes succeed, with great Anxiety, Restlessness, Delirium, Difficulty of Breathing, and a vast Load and Oppression on the *Præcordia*; so as to incline the less cautious Observer to think there may be something pe-

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ripneumonic in it: — but even here beware of Bleeding, for you will find the Pulse very small and unequal, though very quick: Not only the Weakness and Fluttering of the Pulse contraindicate Bleeding, but also the pale, watery, limpid Urine, which is commonly attendant. These Symptoms denote the Load, Anxiety, and Oppression on the *Præcordia* to be from the nervous *Orgasm*, not from a peripneumonic Obstruction, or Inflammation: The Breathing in this Case, though thick and laborious, is not hot, but a Kind of a sighing, or sobbing Respiration, nor is there many Times any Kind of Cough concomitant; so that this is really from some Degree of Spasm on the Vitals, not from Inflammation.—And this is very manifest in hysteric Paroxysms.

Here therefore the nervous cordial Medicines are indicated, and Blisters to the Thighs, Legs, or Arms.—I commonly use the following *Bolus* and *Saline Draught*.

℞ *Pulv. Contrayerv. c. gr. xv. *Croc. Anglic. gr. iii. Confect. Ralegh. ʒi Syr. Croci q. f. m. f. Bolus.*

℞ *Sal. C. C. ʒss. Succ. Limon. ʒiii. Aq. alexet. simpl ʒiss. m. peractâ effervescentiâ adde Sp. Lavend. c. Syr. Croci ana ʒiss. m. f. Haust.*

* When vast Tremors and Subfultus Tendinum come on, I use Musk ʒss instead of the *Pulv. Contrayerv. c.* with great Success.

These,

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These, or the like, I order every 5th, 6th, or 8th Hour, and a temperate cordial Julep; *Spiritus volatilis aromat.* or *fætidus* may be now and then given out of thin Wine, or Cyder-whey, or, which is in many Cases better, out of thin Mustard-whey; which, without any more pompous *Apparatus*, is not a contemptible Medicine, especially for the Poor. These gently stimulate the torpid Vessels, and raise their oscillatory Powers; they attenuate the Humors and dilute them, and by these Means promote easy relieving Sweats, which soon carry off the *Erethism*, as the Ancients called it.— The Saline Draught, prepared as above, is much more apt to pass by the Pores of the Skin than when made with Salt of Wormwood, which rather moves through the urinary Passages.— When I assert, from repeated Experience, the Use of the above described Draught in asthmatic Cases, any one may easily judge of its Efficacy in these.

But to return, this Difficulty of Breathing, Anxiety and Oppression, many Times precede a *miliary Eruption*, which often appears the seventh, ninth, or eleventh Day of this Fever, and sometimes later: — Indeed great Anxiety and Oppression on the *Præcordia* always precede pustular Eruptions of any Kind, in all Sorts of Fevers.— Every one must know how ill-timed and improper Bleeding would be on such an Occasion, when the greatest Care should

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be taken not to retard Nature's Operation in this particular, which is many Times compleatly critical : On the contrary, it should be promoted by soft, easy Cordials, proper Diluents, and the like ; and to these sometimes a little *Theriaca Andromachi*, or *Elixir Asthmaticum*, should be added ; which not only tend to calm the universal Uneasiness commonly complained of, but also very effectually promote a *Diaphoresis*, or breathing kindly Sweats, with which the miliary Eruptions freely and easily advance.

But however advantageous these commonly are, profuse Sweats are seldom or never so, even though attended with a very large Eruption ; for I have known two or three Crops of miliary Pustules succeed one another, and large Sweats, long continued, with no Manner of Relief to the Patients ; nay of very great Detriment, as they reduced them to an extream Degree of Weakness. — In Truth these large Sweats are much more commonly *symptomatical* than critical, and the consequent Eruption is very often the mere *Symptom* of a *Symptom* ; for the miliary Glands of the Skin appear very turgid, and *mimic a Rash* upon profuse Sweating, even in the most healthy.

In such profuse, colliquative Sweats, I have very frequently given a little generous red Wine, (diluted somewhat, if necessary) with the greatest Advantage ; it presently moderating

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ting the Sweat, supporting the Patient, and keeping up also the miliary *Papulae*, if they happen likewise to attend. — *Celsus* advises *Vinum austerrum meraculum in morbo cardiaco* *, which I take to have been a Species of nervous Fever with colliquative Sweats. — Towards the Decline of the Fever, where the Sweats are abundant and weakening, I moreover give small Doses of the Tincture of the Bark with Saffron and Snake Root, hereafter described, interposing now and then a Dose of Rhubarb to carry off the putrid *Colluvies*, in the first Passages; which withal makes the *Remissions*, or *Intermissions*, which frequently happen in the Decline of nervous Fevers, more distinct and manifest, and gives a fairer Opportunity for Preparations of the *Bark*. — I generally give it, about this Time, out of the saline Draughts made with Salt of Wormwood and Juice of Lemons, which makes them much more effectual. I am persuaded this Method will shorten these Fevers, even those with miliary Eruptions, which too often run on to an exceeding great Length, and are frequently attended with dangerous Relapses. — I have more than once known Patients sink under this Fever, after having been kept in a sweating Method for five or six Weeks together, and after having gone thro' three or four successive Crops of miliary Erup-

* *Lib. III. Cap. 19.*

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tions (as they were called) they all the while melting away, and weltering in their own Sweat, and the Bed rotting under them.

Though a gentle Diarrhœa is sometimes of manifest Service towards the End of this Fever, crude, thin, colliquative Stools are very far from being so, but sink the Sick surprisingly fast : Where they are livid, or of a Kind of lead Colour, whatever be the Consistence, it is a dangerous Appearance.

There is no Evacuation of a more favourable Portent than a pretty free Salivation, without *Aphthæ* ; where this happens, with a kindly Moisture of the Skin, I never despair of my Patient, however weak and stupid he may seem : — Indeed the Deafness many Times makes the Sick, at the Close of the Distemper, appear much less sensible than they really are ; not but that many, under these Circumstances, escaping the Grave, degenerate into mere Idiots.

Under any of these Evacuations plentiful, supporting, diluting Nourishment is absolutely necessary to keep up the Spirits, and repair the Loss of the daily wasting Juices, and mend the remaining : Indeed, when the Patients are too heavy and stupid, they should be very frequently prompted to it ; for it is even altogether as necessary as Medicine.

We

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We have very seldom any Thing compleatly critical in this Fever ; in many Cases only Time itself seems to wear it off. The Urine is scarce ever concocted, but crude, pale and thin thro' the whole Course of the Disorder, and frequently much too profuse ; sometimes indeed, after the Exacerbations, or in the Sweats, it is higher coloured, but without Sediment, small in Quantity, and commonly greasy as it were.

It seems to me evident, that too great a Ledor of the lymphatic and most exalted Juices of the Body, is one of the conjunct Causes of slow nervous Fevers ; and I conceive, that as the *Serum*, when once coagulated by feverish Heat, never resolves into any Fluid fit for the Uses of the animal *Æconomy*, but turns into an acrimonious *Putrilage* ; so the ropy, stagnant Lymph corrupts by Degrees into a putrid *Ichor*, which must be discharged from the Body by its common Outlets, or some artificial Drains. Though the Pores of the Skin, and the salival Ducts, are found in general to be the most advantageous Ways ; yet it often partly runs off also by the Intestins and urinary Passages.—Now though these Discharges are many Times very profuse, it is found by Experience, they are not to be too hastily suppressed, without causing a very dangerous Translation of the morbid Matter on the vital Parts : A sudden Check of the Sweats being
most

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most commonly attended with convulsive Rigors, vast Uneasiness and Oppression on the *Præcordia*, *Syncope*, &c ; — as *Nausea*, Sickness at Stomach, Colics, and a Delirium are the common Effects of potent Astringents prematurely administered. — Nay the Blisters in this Case are not to be hastily dried up ; the more they discharge generally so much the better ; and even if they ulcerate somewhat, it is commonly no unfavourable Symptom ; for though it may shew the Acrimony of the Humor drained off, it is a Proof that Nature hath Strength enough to expel it : — So that, when the first Blisters begin to heal up, others should be applied to other Parts ; for it is not merely from the *Stimulus*, but also from the Drain they make, that they are serviceable. — The large angry Pustules, that often break forth at or after the State of this Fever, and frequently ulcerate and run largely, are a Kind of natural Blisters, which give Vent to the putrid corrosive *Ichor*, and sufficiently indicate one Way of giving Nature Relief.

Upon the whole then, where any of these Discharges are very immoderate, they may be prudently restrained, but not repelled : and therefore cold Air, cold Linnen, cold Liquors, or a cold Regimen, are greatly improper. — And yet to be always labouring by very hot Cordials, volatile alcalious Salts, and very hot
Air

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Air to raise Sweats, and to continue them, is really melting, not mending your Patient. And as to a vast Number, and repeated Eruptions, of the *white and red miliary Pimples*, they not only shew the Quantity of the Disease (as we call it) but many Times also the wrong Measures of the Physician. Do we succeed the better for throwing out a vast Number of the Small-pox by a very hot Regimen? And yet the latter bids much fairer for a compleatly critical Discharge than the former.— And I appeal to all experienced Physicians, whether ever they saw large and profuse Sweats of any Service in the Small-pox, or Measles: I am sure I have very many Times found them highly detrimental.

I have been the larger on this Head, as I am fully persuaded, the common Method of treating miliary Fevers by very hot, sweating Medicines, and Regimen hath been the Bane of Thousands.— In a Word, whether in miliary Fevers, or the slow nervous without Eruptions, the sole End of Medicine should be to assist Nature in her Operations, and support her under them; ~~but in~~ such Manner as may comport with the general Laws of the animal Œconomy; promoting by Art, where the Discharges are deficient by Nature, or restraining when profuse and inordinate; taking Care at the same Time never to pervert, in any particular

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ticular Disease, any particular *Crisis*, which by just Observation, and long Experience, hath been found regular, constant and salutary, but always to favour it.—Thus, to give an Instance in the Fever now treated of; when a *Diarrhœa* happens too profuse, it may be restrained by a gentle cordial Opiate, as *Theriaca Andromachi*, or the like, which by quieting the Irritation, and promoting the cuticular Discharge, moderates the Flux; for gentle, easy breathing Sweats are always found advantageous. — To stop it at once, by very strong Astringents, is to pervert Nature's Endeavours, as they tend to prevent both Stool and Sweat. — But whoever will be more fully informed of the Method of treating the slow nervous Fevers, may consult a late judicious Treatise of Sir Richard Manningham on the *Febricula*, &c.

C H A P. VIII.

Of putrid, malignant, petechial Fevers.

LET us next take a View of the putrid, malignant, or pestilential, petechial Fevers, and then proceed to offer some few Directions as to the Method of Cure.

The highly putrid, malignant, and even petechial Fevers many Times arise from mere antecedent Acrimony of the Blood, agitated
by

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by the supervening Fever, yet generally the pettilential and petechial have their Origin from Contagion; and may therefore affect Persons of all Constitutions, which will of Course produce a great Diversity in the Symptoms. — For, as the received Contagion acts nearly in the same Manner as Acrimony, it will have very different Effects, when it invades a strong vigorous Constitution, and a rich fizy Blood, from what it will, when it attacks a weak, lax Habit with a poor thin Blood, and a too loose *Crafs* of its Globules; and from one and the other, when it falls in with a very acrimonious Mass of Humors.

In general however these Fevers attack with much more Violence than the slow nervous, the *Rigors*, if any, are greater (sometimes they are very great) the Heats much sharper and permanent, yet at first sudden, transient and remittent: The Pulse more tense or hard, but commonly quick and small, though sometimes slow and seemingly regular for a Time, and then fluttering and unequal. — The Head-ach, Giddiness, *Nausea* and Vomiting are much more considerable, even from the very Beginning. — Sometimes a severe fixed Pain is felt in one or both Temples, or over one or both Eyebrows, frequently in the Bottom of the Orbit of the Eyes. — The Eyes always appear very full, heavy, yellowish, and very often a little inflamed.

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inflamed. The Countenance seems bloated and more dead-coloured than usual.—Commonly the temporal Arteries throb much, and a *Tinnitus Aurium* is very troublesome : A strong Vibration also of the carotid Arteries comes on frequently, in the Advance of the Fever, tho' the Pulse at the Wrist may be small, nay even slow : This is a certain Sign of an impending Delirium, and generally proceeds from some considerable Obstructions in the Brain.

The Prostration of Spirits, Weakness and Faintness are very often surprisngly great and sudden, tho' no inordinate Evacuation happens ; and this too sometimes when the Pulse seems tolerably strong. — The Respiration is most commonly laborious, and interrupted with a Kind of Sighing, or Sobbing, and the Breath is hot and offensive.

Few or none of these Fevers are without a Sort of *Lumbago*, or Pain in the Back and Loins ; always an universal Weariness, or Soreness is felt, and often much Pain in the Limbs. — Sometimes a great Heat, Load and Pain affect the Pit of the Stomach, with perpetual Vomiting of *porraceous*, or *black Cholera*, and a most troublesome *Singultus* ; the Matter discharged is frequently of a very nauseous Smell.

The Tongue, tho' only white at the Beginning, grows daily more dark and dry ; sometimes of a shining livid Colour, with a Kind of
of

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of dark Bubble at the Top; sometimes exceeding black; and so continues for many Days together; nor is the *Tinge* to be got off many Times for several Days, even after a favourable Crisis: At the Highth of the Disease it generally becomes vastly dry, stiff and black, or of a dark Pomegranate Colour. —Hence the Speech is very inarticulate, and scarce intelligible.

The Thirst, in the Augment of the Fever, is commonly very great, sometimes unquenchable; and yet no Kind of Drink pleases, but all seem bitter and mawkish: at other Times however, one is amazed to find no Thirst complained of, tho' the Mouth and Tongue are exceedingly foul and dry; this is always a dangerous Symptom, and ends in a Phrenzy, or Coma.—The Lips, and Teeth, especially near the State, are furred up with a very black tenacious *Sordes*.

At the Onset of the Fever the Urine is often crude, pale and vapid, but grows much higher coloured in the Advance, and frequently resembles a strong *Lixivium*, or *citrine Urine tinged* with a very small Quantity of *Blood*; it is without the least Sediment, or even Cloud, and so continues for many Days together: by Degrees it grows darker, like dead, strong, high-coloured Beer, and smells very rank and offensive. — I have frequently seen the Urine, in petechial Fevers,

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Fevers, almost black, and very foetid ; particularly that of one Mr. *Shirley*, a Sea-Surgeon, was almost quite black, with a Sediment as dark as Soot : He had Abundance of very black Spots, *Vibices*, bloody Dysentery, and comatose Phrenzy, and died about the thirteenth Day.

The Stools, especially near the State, or in the Decline of the Fever, are for the most Part intolerably stinking, green, livid, or black, frequently with severe Gripes and Blood.— When they are more yellow, or brown, the less Danger ; but the highest, when they run off insensibly of whatever Colour. It is likewise a very bad Symptom, when the Belly continues hard, swoln, and tense after profuse Stools ; for this is generally the Consequence of an Inflammation, or Mortification of the Intestins. — A gentle Diarrhœa is often very beneficial, and sometimes seems the only Way Nature takes to carry off the morbid Matter.

When black, livid, dun, or greenish Spots appear, no one doubts of the Malignity ; the more florid however the Spots are, the less is to be feared ; it is a good Sign, when the black, or violet *Petechiæ* become of a brighter Colour.—The large black, or livid Spots are almost always attended with profuse Hæmorrhages. — The small dusky brown Spots, like *Freckles*, are not much less dangerous than the livid and black ; tho' Fluxes of Blood do but seldom

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seldom accompany them: Excessively profuse, cold, clammy Sweats are often concomitant, by which also they sometimes vanish, tho' without any Advantage to the Patient.—The Eruption of the *Petechiæ* is uncertain, sometimes they appear the fourth or fifth, sometimes not till the eleventh, or even later.—The *Vibices*, or large livid, or dark greenish Marks, seldom appear till very near the fatal Period.—We frequently meet with an Efflorescence also, like the Measles, in malignant Fevers, but of a more dull and lurid Hue, in which the Skin, especially on the Breast, appears as it were marbled, or variegated: This in general is an ill Symptom, and I have often seen it attended with very fatal Consequences.

Sometimes about the eleventh or fourteenth Day, on the Coming on of profuse Sweats, the *Petechiæ* disappear, and vast Quantities of small, white, miliarial Pustules, break out: I have seldom seen this of very considerable Advantage; but, if an itching, smarting, red Rash, it commonly greatly relieves the Sick; and so do the large, fretting, watery Bladders, which many Times rise up on the Back, Breast, Shoulders, &c. A scabby Eruption likewise, about the Lips and Nose, is certainly one of the salutary Symptoms; and the more hot and angry, it is so much the better.—But of much more uncertain and dangerous Event are the brown

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dark-

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dark-coloured *Aphthæ*; nor are those that are exceeding white, and thick like *Lard*, of a very promising Aspect.—They are soon succeeded by great Difficulty of swallowing, Pain and Ulceration of the *Fauces*, *Œsophagus*, &c. and with an incessant *Singultus*: The whole *primæ Viæ* become at last affected, a bloody Dysentery comes on, followed by a Sphacelation of the Intestines; as is evident from the black, sanious bloody Stools, horribly foetid, and extremely infectious.

Vibices, or large black and bluish Marks resembling Bruises, are frequently seen towards the Close of the Fever; and, when attended with Lividity and Coldness of the Extremities, are certain Tokens of approaching Death: I have seen the Blackness reach almost to the very Elbows, and the Hands dead-cold for a Day or two before the Death of the Patient.—A remarkable Instance of this Kind I met with some few Years since in one Mrs. *Hopkins*, to whom I was called the seventh Day of her Illness. She was stupid and somewhat delirious, perpetually sighing, as if under the Extremity of Grief, and complaining of infinite Load and Oppression at her Heart. She had a very quick, small, trembling, unequal Pulse, and a short, catching, laborious Breathing; she had had no Manner of Sleep for a long Time, and yet lay very stupid; she had no great Heat, tho' insatiably

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tiably thirsty; the Tongue was not very dry but blackish, her Throat was somewhat sore, and she swallowed with Difficulty: Her Eyes were staring, fixed and inflamed.—The eighth Day she had exceeding profuse Sweats, her Tongue grew quite black, or rather livid, and extremely dry: In the Evening the *Catamenia* broke forth and became very immoderate, (she was a Nurse, and this was the first Time they appeared since her Delivery) the Sweats continued, and were of a very ill Smell. The ninth they discovered *Vibices*, or large black Spots on several Parts of her Body, one in particular on the Top of her Nose, and another on the Bridge of it, which turned quite black, as did a large Blotch on each Cheek nearly of the Breadth of a Crown-piece.—The tenth the *Catamenia* ceased, she fell into a violent Purging, her Belly swelled exceedingly: Her Nails and Hands grew very black, and as cold as Marble: The Urine and Stool ran off involuntarily, she lay altogether insensible till the eleventh Day, and then died.—An intolerable Stench arose from her at least forty Hours before her Death, tho' kept clean with all possible Care.

I am very sensible, the Word *malignant*, as applied to Fevers, hath of late Years fallen into very great Disrepute, and probably it hath been often made Use of to cover Ignorance, or magnify a Cure.—But there is really a Founda-

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tion in Nature for such an Appellation, at least for some Word, that may distinguish such a Disease, as I have been now describing, from a common inflammatory Fever; indeed the very Term *inflammatory Fever* supposes there are other Kinds of Fevers.—It is perhaps indifferent whether you call them putrid, malignant, or pestilential;—when *Petechiæ* appear, every one calls them spotted or petechial,—and, if from Contagion, contagious.—I will contend with nobody about Words, but it is necessary we should have some to communicate our Ideas, and, where they are well defined, no one hath great Reason to quarrel with them.

I have the utmost Honour for the Memory of the great *Sydenham*; and yet, I must say, had he not treated all Fevers as merely inflammatory, even the Plague itself, his Practice had been more universally just and imitable, as being extremely well adapted to those, that depend on an inflammatory Lensor.—But surely it is not always to be followed, even in the Small-pox, which in general he hath admirably well described and most judiciously treated.—Without all Doubt there are Fevers, that require something more than the Linctus, small Beer and a Purge. Is the low nervous Fever to be treated so? Are some Kinds of Small-pox and petechial Fevers, the miliary, &c. to be so

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so managed? I appeal to all experienced and rational Practitioners.—But Honour to whom Honour is due: He justly opposed and exploded the hot, sweating, firey Regimen, which was then commonly used in all Kinds of Fevers, and introduced proper Evacuations, and the cooling diluting temperate Regimen: A Method most certainly right in all Kinds of inflammatory and ardent Fevers.—Yet mere Evacuations, and cold watery Diluters will not indifferently suit all Sorts of Constitutions and Fevers.—But Opposition is commonly carried too far, and a favourite Notion may sometimes lead one to *extinguish almost the vital Flame*, and another to fire the Fabric, lest the *deleterious Miasmata* should make a Lodgment in it.

If a Fever be an Effort of Nature to throw off some offending, or morbid Matter, as most certainly it is, surely it will not be always proper to check it.—The hot Fit of a Tertian, by attenuating the Lentor of the Humors, and removing the Obstructions in the Extremities of the capillary Arteries, terminates the Paroxysm.—Improper Bleeding and Purging often protract it greatly, and make it both anomalous and dangerous.—When the Contagion of the Small pox is received into the Blood, it produces a Fever, which in a mild Kind of them soon ends in a compleat Eruption, and thence ceases; the Fever, or the Effort of Na-

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ture, having expelled the morbid Matter.— But many Times from profuse Evacuations, immoderate Fear, Sinking of the Spirits, and improper Management, she hath not sufficient Vigor to expel the Disease by a proper *Crisis*; but the Pustules are pale, wan, sessile, and remain crude and without any regular Maturation.—And this often is the Case in other eruptive Fevers, even the Plague itself.

The Reason we have to bleed therefore, in the Beginning of such Fevers, is to prevent the Fever from running too high, and producing Inflammations of the Brain, Lungs, or other vital Parts; which a great Fulness of rich, dense Blood, violently moved and heated, is very apt to bring on.—In Truth Bleeding in a contagious Disease, as arising merely from Contagion, seems not indicated; because the Contagion is intimately mixed with the Humors, and, by drawing off a small Part of the Blood, you very little lessen the whole Contagion, which will have its Effect, more or less, whether you bleed, or bleed not.—And we find, by the Experiment of Inoculation, that the least Quantity of the variolous Matter, introduced into the Blood, will produce the Small-pox: And we see the same in other Cases, whether the Bite of a Viper, or mad Dog; in the latter of which, by the bye, a small Wound is generally found worse than

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than a large lacerated one; because this gives a more free Vent again to the Poison.

When you have intimately mixed any Ferment with a Liquor to be fermented, you cannot destroy the Fermentation by drawing off Part of the Liquor; for every Part of the Liquor, when in Fermentation, is a Ferment; so Contagion received into the Blood operates on, and in, every Part of it.—By cooling indeed, adding Acids, &c. you may moderate the Fermentation; and, when it is too violent, you may prevent the Splitting of the Vessel (if too full and close shut) by giving proper Vent: So in contagious Fevers, by drawing off Blood you may lessen its Quantity, and prevent it from over-distending, inflaming and rending the Vessels, and lessen the Heat: which might otherwise very greatly augment the Force of the Contagion, and turn the whole Mass of Humors into a mere inflammatory Glew.—But if, to carry on the *Simile*, you cool the fermenting Liquor too much, and prematurely suppress the Fermentation, you render the whole vapid and ropy, and it never purifies itself by a proper *Despumation*, or becomes a good, vinous Liquor.—Thus when Contagion is received, if you weaken the Powers of Nature too much by Bleeding, &c. and hinder her Operations in *despumating* (as *Sydenham* calls it) the morbid Humors; you concentrate the Disease, which

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turns the whole Mass of Blood into a putrid *Ichor*, or *Sanies*.—However, as Bleeding may lessen the Fewel, tho' it doth not extinguish the contagious Fire, it is highly proper where there is a Redundance of Blood.—But yet the Infection will have its Effect; and I have seen as numerous, and as bad a Kind of Small-pox, after profuse Bleeding, as ever I did when it had been omitted.—It is certain moreover that the Plague, which stands first in the List of contagious Fevers, will very seldom bear Bleeding, to any Degree at least, as appears from the very best Authorities.

But let us finish this Chapter with a few Words on the curative Intentions, proper in the Fevers, which it particularly treats of.—And here first let me note, that tho' malignant and pestilential Fevers, at the very Onset, greatly sink the Spirits, and cause surprizing and sudden Weakness, especially when from Contagion; yet Bleeding to some Degree is most commonly requisite, (nay necessary in the Strong and Plethoric) not only to lessen the *Moles movenda*, and give a freer Play to the oscillating Vessels; but also to prevent any inflammatory Obstructions, which may form in the very Beginning, and likewise to moderate the Friction and Heat, which are often very considerable for the first Days of the Disorder, and which more and more exalt the Salts and Sulphurs of the Blood,

encrease

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increase the Acrimony, and putrescent State of the Humors, and greatly favour the Action of the morbid Matter.—This therefore, when indicated, should be done as early as possible.—A quick tense Pulse, sharp Heat, great Difficulty of Breathing, Palpitation of the Heart, and violent Pain of the Head and Back evidently demand it.—But it should be duly observed, that tho' a *Rigor* precede the Heat, and the Oppression on the *Præcordia* be very considerable; yet much less Blood should be taken off than in a true Peripneumony, which oftentimes makes its Attack much in the same Manner: But the sudden Weakness and great Dejection of Spirits, the Trembling of the Hands, the Paleness and Crudity of the Urine, together with the Absence of a Cough, and Heat of the Breath, which, attend true peripneumonic Fevers, distinguish the one from the other. Besides this Affair is less liable to be mistaken, when putrid, pestilential, or petechial Fevers are common, and the Constitution of the Air disposeth to them.—Whatever be the Case, the Blood drawn will soon shew the Difference, which, in malignant Fevers, is of a much more loose Contexture and softer Consistence (tho' it may appear very florid) than that of pleuritics, or peripneumonics; which tho' it may, at the first Bleeding, appear very bright, and without a tough white Pellicle on it, especially if it trickles down the Arm,

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Arm, and doth not run off in a full Stream, yet when cold it will form into a very firm and dense *Crassamentum*.—When you find it quite otherwise, be cautious, in all Cases, and not too prodigal of the vital Fluid.

Now though it may be necessary to bleed the Strong and Robust at the very Beginning of contagious Fevers, yet we should have a very careful Regard to the Nature of the Fever, as arising from Contagion, which seems to affect not only the *Blood*, but primarily also the *animal Spirits*: I think the sudden Damp, Weakness, Tremblings, and great Dejection of Spirits, at the very Attack, evidently shew it.—In some Plagues Persons have been struck dead as with a Blast of Lightning, without any precedent Fever, or even Indisposition.—It is impossible to account for the immediate Operation of the Bite of a Rattle-snake, which kills often in less than a Minute or two, on any other Supposition; nor for the surprisingly sudden Effect of some Smells, on some Persons, which almost instantaneously throw the whole Frame of Nature into the utmost Confusion, and even Convulsion.—The now well-known Effects of the Stroke of *electric Effluvia* not only seem to confirm this Notion, but also shew the analogous Manner in which it is done.—Whoever would see more of this, may consult the

the

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the illustrious Dr. Mead's *Introduction to the third Edition of his Essay on Poisons.*

But the Nerves and animal Spirits, being affected by the contagious *Miasmata*, do not sufficiently and regularly actuate the muscular Fibres and Vessels; whence arises great Debility, and too weak a Vibration of the vascular System; and hence the Blood in some Places runs into grumous Concretions, and in others is quite dissolved.—The Heart and its Auricles are found vastly distended with grumous Blood in those that die of the Plague, the Blood recoiling upon the Heart, which hath not sufficient Power to protrude it; but yet the Blood in the other Vessels appears vastly thin and dissolved, insomuch that it frequently runs off *quà data porta: Timoni** and others observe that it is exceedingly difficult to stanch it at the Orifices made by Bleeding and Cupping — This I have likewise many Times observed in common petechial and pestilential Fevers.

From the peculiar Disposition of the nervous Filaments, and that of the most subtle and exalted Part of the animal Fluids, which so greatly differs in different Persons, arises that astonishing Diversity of Affections even from the very same Cause.—The Smell of an Herb, Flower, Musk, that refreshes thousands, makes some particular People faint.—The Stroke of

* See Philosoph. Transact. No. 364.

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electric Effluvia affects different Persons in a very different Manner, at least in very different Degrees; probably not only from the different *Crafs* of the animal Spirits, but also from the different Tension, Strength, &c. of the nervous *Fibrillæ*: As musical Strings, of different Length and Tension, will be very differently affected by the same Note.—It may perhaps, in Part, be owing to the peculiar Disposition of the Nerves and animal Spirits, that some are very readily infected by the Plague, Small-pox, &c. and some never, although Multitudes suffer around them.

But be this as it will, the Contagion certainly weakens the Force of the Solids, and tends to dissolve the Blood; so that, when we have a Suspicion that a Fever arises from Contagion, we should proceed with Caution in letting Blood, even though the Symptoms may run pretty high at the Beginning, and seem to demand the Taking off a pretty-large Quantity.—In malignant Pleuro-peripneumonies and Peripneumonies I have too often seen, and been sorry for very untoward Mistakes in this Matter, particularly in the Years 1740, 1741, and 1745:—And therefore, though the first Bleeding may be very proper, the subsequent may not be so, nay pernicious.—The first Blood frequently appears florid, what is drawn twenty-four Hours after is commonly livid, black, and

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and too thin, a third Quantity livid, dissolved, and sanious.—This is frequently the Case in malignant petechial Fevers: I have sometimes observed the *Crafsis* of the Blood so broken as to deposit a black Powder, like Soot, at the Bottom, the superior Part being either a livid Gore, or a Kind of a dark green, and exceedingly soft Jelly.—Besides, the Pulse, in these Cases, sinks oftentimes surprisingly after a second Bleeding, nay sometimes after the first: And this I have more than once noted to my great Concern and Astonishment, and that even where I thought I had sufficient Indications from the Pulse, &c. to draw Blood a second Time.—So necessary is it therefore to have a due Regard to the peculiar Nature of an epidemic Fever.

Scarce any infectious Fever makes an Attack on any Person, without bringing on a Sickness at Stomach and Vomiting. As the morbidic *Effluvia* are swallowed with the *Saliva*, &c. may they not, in Part at least, be washed off and rejected, by co-operating with Nature, in promoting the Vomiting?—By which also any bilious, acrid, putrid *Colluvies*, that may lie in the Stomach, is carried off; which otherwise, by growing more and more corrupt, would produce a Variety of ill Symptoms, and greatly encrease the original Disease.—Besides, Nature many Times strives in vain to discharge

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charge by Vomit without the Assistance of Art, and yet as violently, as when a proper *Emetic*, and a *proper Wash*, are made Use of: Nay drinking something to promote the Vomiting makes it both much easier, and much more effectual, and by carrying off the irritating Matter tends greatly to stop the Vomiting. But then I would have this done always by very gentle Means, such as Infusion, or Decoction of *Ipecacoanha*, *Oxymel scilliticum*, with a slight Infusion of Chamomile Flowers, or the like.—The Method of Vomiting by mere warm Water I do not approve of, as you are oftentimes obliged to swallow down immense Quantities, before you can raise the Vomiting, which sometimes overloads the Stomach to such a Degree, that its Force is not sufficient for the Weight laid on it, and cannot reject it; so that the more you drink, the less capable it is of doing its Office: and thus, being over-distended, it becomes quite inactive, whence dreadful Effects may follow.—In all Cases therefore, if no Vomiting follows after having drank a Pint or two, solicit a Discharge with your Finger, or a Feather, and by all Means beware of that Deluge of Drink, which is too often very preposterously given.—I think, by the Way, the Observation, that the Stomach is utterly inactive, and cannot reject any Thing when over-distended, just as the urinary Bladder

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der when overful cannot render any Urine, shews that *Vomiting* is not solely from the Action of the *Diaphragm* and *abdominal Muscles*, as *Monf. Chirac* and others suppose; for their utmost Efforts many Times produce no Manner of Effect on an overful Stomach or Bladder:—In the latter, we are frequently obliged to have Recourse to the *Catheter*.

If the Vomiting continues, after the Stomach is washed out, give a little *Theriaca Andromachi* out of an appropriate stomachic Mixture, as Salt of Wormwood, Juice of Lemons, Mint-water, &c. and apply an aromatic Fomentus, or rather a Cataplasm of *Species aromaticæ* with *Theriaca*, which most Times succeeds when every Thing else fails.

Not only the Stomach, but the whole intestinal Canal, should be unloaded in the Beginning of these Fevers; but I am sure Reason and Experience shew the Necessity of doing it by very gentle Methods; Clysters of Milk, Sugar and Salt, Laxatives of Manna, Cream of Tartar, *Sal cathartic. Glauberi*. Tamarinds and Rhubarb, are what I would chiefly, if not only, advise. I have too often seen the extreme ill Effects of acrid and stronger Purgatives.—* *Hoffman* cautions even against *Sena*. The above soft, easy Emetics and *Eccoprotics*,

* *De Febribus petechial. veris. Tom. IV.*

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have this further Advantage, that they may be repeated, and given from Time to Time, as the putrid bilious *Colluvies* drains into the first Passages.—By such Means I never fear to puke, or promote a Stool or two, when indicated, at any Time of the Fever, by a nauseous bitter Taste in the Mouth, Sickneſs at Stomach, *nidoroſe* and foetid *Eruſtations*; or by too great Coſtivenenſs, tumid Abdomen, *Borborygmi*, griping Pains, &c.

Tho' *Hippocrates* * adviſes in general againſt purging off the crude Humors, in the Begining of Diſeaſes, before they are concocted; yet he allows we may purge in the Begining, when there is a *Turgeſcence* of the Humors, and they make an Effort to be diſcharged: Thus a *Cholera Morbus* is an Effort of Nature to throw off a ſuperabundant acrid Bile.—When putrid, malignant autumnal Fevers ariſe from a Redundance of putreſcent *aduſt Choler*, as the Ancients called it, in the Region of the Liver, Stomach, &c. which is very often the Caſe after hot Summers have greatly encreaſed and exalted the Bile, animal Salts and Oils; we ſhould certainly begin with ſuch gentle Emetics, and Cathartics, as I have mentioned.

Unqueſtionably the bilious Principle is too greatly predominant in all putrid, malignant, and

* *Aphor. 2. Sect. I. & Lib. de Humoribus.*

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petechial Fevers.—The Gall-bladder and biliary Ducts are always found full of black or green Bile in those, that die of pestilential Diseases, and so is the Stomach, *Duodenum*, &c. † — Now if this putrid Bile is not carried off, it grows more and more corrupt, and causes vast Anxiety, Sicknefs at Stomach, Pain, &c. and, being re-absorbed into the Blood, creates infinite Evils, greatly irritates the *Genus nervosum*, destroys the *Crisis* of the Blood, and turns the *Lymph* into a corrosive *Ichor*.— Where therefore there are Signs of its being redundant, it should be forthwith discharged by Vomit, or Stool, as Nature points out.—I have many Times, with the greatest Pleasure, in these putrid Fevers, seen an amazing Change for the better immediately succeed a Fit of Vomiting, and a Stool or two ; where an inexpressible Anxiety, Load on the *Præcordia*, perpetual Sicknefs, *Eruetation* and *Singultus* had preceded. The extrem Foulness of the Tongue, Sicknefs and Load at Stomach, with a loathsome bitter Taste, and horribly offensive stinking Breath and Erucations, shew the Condition of the Stomach ; and the abominably foetid, black, bilious Stools the Necessity and Advantage of that Discharge.— Surely if a Poison of any Kind was lodged in the Stomach, or Bowels, we should not hesi-

† *Traité de la Peste, &c. Paris 1744. 4to.*

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tate about the Necessity of carrying it off as soon as possible ; and truly putrid Bile is little less pernicious than an actual Poison. Commonly about the State of these Fevers, or between the seventh and fourteenth Day, Nature of her own Accord endeavours to relieve herself from the putrid bilious *Colluvies* by Vomit, or loose Stools more frequently ; and her regular Operations should always be favoured by Art : and accordingly I generally give a gentle Laxative the eighth or ninth Day, unless I find some Eruption appearing, or a kindly Sweat forbid it.—Till this Time, I seldom use any Kind of Purgative except a little Manna, Cream of Tartar, or the like, at the very Beginning, (especially when I have Reason to think the Disease arises more from Contagion than a putrid *Saburra*) ordering however an emollient, laxative Clyster every second or third Day, as there may be Occasion.—This Laxative I repeat from Time to Time as Symptoms indicate, and during the Operation carefully support my Patient with proper cordial Diet, Drink and Medicine.—By these Means, I not only prevent the Congestion, and encreasing Corruption, of this putrid bilious Matter in the first Passages, but also its *Reabsorption* into the Blood ; and likewise solicit a further Discharge of the morbid Humors into the intestinal Canal, and thence out of the Body. This gentle Method of purging
ing

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ing about this Time, in these Fevers, I have for many Years found of very great Advantage; but I protest against the *aloetic, scammoniate Coloquintida* Purgers; which in such a putrid, dissolved, acrimonious State of the Blood are Poisons, not Medicines: and whoever uses them in such a Case, should have the Guts of his Brain purged, if he hath any there. — Nature indeed, without such powerful Stimulants, too frequently over-acts her Part, and runs into a profuse Diarrhoea, a Dysentery, soon fatal if not restrained; — but this most commonly happens from suffering the corrupt bilious Matter to lodge, and putrefy too long a Time, in the Bowels; and the best Way to prevent it is to dislodge it, at proper Seasons, and due Intervals. — When we are threatened with such an immoderate Discharge, we must have Recourse to proper astringent Alexipharmacs, *Theriaca Andromachi, Confect. Fracastor.* Tincture of Roses, red Wine mulled up with Cinnamon, &c. but above all, if the Case be very urgent, to an astringent Clyster of *Confect. Fracast.* or *Theriaca Andromachi*, with a small Quantity of Decoction of Tormentil, red roses, or Japon Earth. — But no small Degree of Prudence is necessary in the Use of it; for it is always of dangerous Consequence to suppress a critical Diarrhoea prematurely; and I think it should never be done without premising a small Dose

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or two of Rhubarb. — Before I conclude this Paragraph, I cannot but take Notice, that tho' I have very often seen a Diarrhœa critical and salutary at the State, or Decline of these Fevers, I generally find it prejudicial at the very Beginning ; especially if very thin, serous and profuse. — Nothing more certainly shews a Diarrhœa to be useful, than when a gentle breathing Sweat, or warm Moisture of the Skin, accompanies it.

Tho' Nature very frequently affects to discharge the morbid Matter, in putrid malignant Fevers, by Vomit and Stool ; yet her more constant and grand Effort is through the Pores of the Skin.—I solemnly assert, I never saw one of these Fevers compleatly judged, or carried off, till more or less of a Sweat issued.—If it proves moderate, warm, and equally diffused over the whole Body, such as we call a breathing Sweat ; if it comes on about the State of the Disease, and the Pulse grows more open, soft, and calm a little before, and during its Continuance, it is always salutary : — But if very profuse, cold, clammy, or partial, about the Head and Breast only, we have much more Reason to fear than to hope from it. — If profuse Sweats break forth at the Beginning, they are generally pernicious ; especially if a *Rigor* supervenes.

But,

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But, as these Sweats are always most favourable, when they are more the Work of Nature than Art; they should never be too soon, or too forcibly driven out by violent hot Medicines, Regimen, &c; it is sufficient to promote and support them, by plentiful subacid Diluents, and gentle cordial Diaphoretics; such as may dilute and wash off the Salts, temperate the Acrimony, and prevent the further Encrease of the *Putrescence*, and Dissolution of the Blood, and preserve and strengthen the Tone of the Solids.

But, as Persons of very different Constitutions, both as to their Solids and Fluids, may be attacked by contagious Diseases, very different Methods of Cure will be necessary in their respective Cases: Those of strong Fibres, and a rich dense Blood, do not require such warm Medicines as are necessary to support the Feeble and Phlegmatic. It should be observed in general however, that as the Blood and Humors in pestilential and petechial Fevers tend to Dissolution, Stagnation and Putrefaction; such Methods as will preserve the *contractile* Force of the Vessels, and prevent the Advance of Putrefaction, are necessary: The vegetable, and even properly prepared mineral, Acids are highly serviceable in the latter Intention; and the subastringent Alexipharms are

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very useful in the former. — But I am very certain, that the Use of volatile, alcalious Salts and Spirits is very hurtful ; as they without all Doubt augment the putrescent State of the Humors, and act as so many *Spurrers* on to swifter Destruction : — A very large Use of them, without the Aid of Contagion, being found to bring on a Corruption and Dissolution of the Blood, and such Kind of Fevers, even in the most healthy. — Perhaps the pestilential *Miasmata* themselves are only highly volatilized and subtilized animal Salts : — The Generation of pestilential Fevers, by the putrid Exhalations of dead Bodies, after Battles, Sieges, &c. seems to shew this.

What I have said of volatile alkalious Salts, leads me to a Reflexion on the promiscuous Use of Blisters in these Fevers ; which by some are deemed the only *Anchor of Hope* in such dangerous Cases : But I think they are many Times too hastily and improperly applied, especially in the Beginning, when the Fever runs high, and doth not demand a further *Stimulant* ; for the Action of the *Cantbarides* is not merely on the Skin, but affects the whole nervous and vascular System : Now when the Irritations and Vibrations are already too great, as frequently happens in the Beginning of such Fevers, they are very injudiciously applied. Besides, the
Salts

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Salts of these *Flies* operate much in the same Manner as the volatile alkali Salts, and certainly tend to promote the Dissolution, and consequently Putrefaction of the Blood.—It is true indeed, Nature may sometimes want a *Spur*, nay often doth so, particularly towards the Decline of these Fevers; when the Solids grow torpid, the Circulation languid, the Spirits *effæte*, and the Sick comatose: Here Blisters must be applied, and are of exceeding great Use, at whatever Time of the Fever such a Train of Symptoms comes on.—But, in the above Circumstances, I have very many Times seen very pernicious Effects attend their too early Application; as obstinate *Pervigilium*, *Delirium*, Suppression of Urine, *Tremors*, *Subsultus*, &c. I would therefore advise the younger Practitioners, before they deal largely in these *wholesome Severities*, to consult *Baglivi de usu and abusu Vesicantium*; and they will understand him much the better, if they previously read his Treatise *de Fibrâ Motrice*, & *Bellini de Stimulis*.—Let me further add, that where several Blisters are laid on in any acute Case, the Patient should drink freely of Whey, Emulsion, or some other subacid and demulcent Liquor; otherwise he may suffer almost as much from the Remedy as from the Disease.

It may be expected I should mention *Camphire*, as the grand *Corrector* of the Acrimony of *Cantharides*; and in this View I frequently use it,

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well knowing that nothing more effectually blunts the *Spicula* of Salts than this exceeding *fine, volatile, vegetable Sulphur*; even those of mercurial Preparations are greatly softened by it.—But I think, in these putrid pestilential Fevers, it answers a much more important End by promoting a *Diaphoresis*, or easy Sweat, which is universally allowed in such Cases of the highest Service: But nothing more certainly doth this than Camphire, with this further Advantage, that it by no Means heats so much as volatile alcalious Salts, and ardent Spirits.—Besides, its anodyne demulcent Quality makes it vastly serviceable, in quieting the *Erethism*, and bringing on Composure of Spirits and easy Sleep, when Opiates fail, nay augment the Tumult and Hurry.—Indeed, when joined with an Opiate, it is the most certain Sudorific in Nature; and the *Elixir asthmaticum*, or *paregoricum*, is not only in this Respect, but in many others, a most noble Medicine. But whenever Opiates are given in these Fevers, it should be only in small Quantities at a Dose, which may be repeated, as indicated; *Tberiacal Andromachi*, *Mithridate*, *Diascordium*, & *Elixir paregoricum* are without all Doubt much the best. Camphire however hath this Fault, that it is very disagreeable to the Stomach, but when dissolved in (or rather intimately mixed with) *hot Vinegar*, after the
Manner

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Manner of the *Julep. à Camphorâ*, it fits much easier, and is a Medicine excellently well adapted to putrid malignant Fevers, and even the Plague itself: For both Camphire and Vinegar are highly recommended, by almost all Physicians, in pestilential Diseases. The *French Physicians* made great Use of both, with Success, in the late *Plague of Marseilles*, &c. and *Heimius* * had a Statue erected to his Memory, for the Service he did in the Plague at *Verona* by a Medicine, the *Basis* of which was *Camphire*.

Now, as we are obliged to give Acids and Subastringents, in putrid malignant and petechial Fevers, to preserve the *Crisis* of the Blood, and the *Tone* of the Vessels, and prevent the further *Putrescence* of the Humors; Diaphoretics (the chief of which is Camphire) should be joined with them, to keep up a free Perspiration, or gentle Sweat, which the former are apt to retard: This is quite conformable to the Practice of the Ancients, who mixed Astringents with Alexipharmacs, in the Composition of their *Antidota*, as may be seen in *Theriaca Andromachi*, *Mithridate*, &c. — I am persuaded they are better for it. — These have stood the Test of Ages, and are unquestionably

* *Vid. Etmuller. de Peste Tom. i. p. 263. Edit. Francofurt. 1688. Fol.*

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excellent Medicines (when well used) tho' there may be several Things in them trifling both as to Quantity and Quality.—I very well know *Alum* and *Nutmeg* may be given with Advantage, in other Fevers, besides Intermittents; especially when a little *Campfire* and *Saffron* are joined with them.

Here I beg Leave to insert the following *Preparation of the Bark*, which I have used for many Years with Success, not only in intermittent and slow nervous Fevers, but also in the putrid, pestilential, and petechial, especially in the Decline; and that too many Times tho' the Remissions have been very obscure, and yet with a very good Effect.—But if the Patient is costive, or hath a tense and tumid Abdomen, I always premise a Dose of *Rhubarb*, *Manna*, or the like.

R. Cort. Peruv. opt. pulv. ℥ii. Flaved.
Aurant. Hispal. ℥iss. Rad. Serpent. Virgin.
℥iii. Croc. Anglic. Div. Coccinel. ℥ii. Sp. Vini
Gallici ℥xx. f. Infusio clausa per dies aliquot
(tres saltem quatuorve) deinde coletur.

Of this I give from ʒi to ℥ss every fourth, sixth, or eighth Hour, with ten, fifteen, or twenty Drops of *Elixir Vitrioli* out of any appropriate Draught, or diluted Wine.—This I order to be kept, in these Parts, as an officinal Medicine; and as a very useful one I recommend it

to

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to the Tryal of others.—I very well know it will sometimes succeed in Intermittents, when the Bark in Substance, or Decoction, will not easily sit with the Patients :—And this is often an Advantage of Medicines given in a liquid Form, which in a solid one proved disagreeable; and therefore where it can be conveniently and effectually done, it should be complied with.—The above Composition tends to strengthen the Solids, to prevent the further Dissolution and Corruption of the Blood, and in the Event to restore its *Crafsis*: — And this it doth without shutting up the Pores of the Skin too much which the Bark in Substance too frequently doth. —For it should be noted, that tho' very profuse Sweats in these (and all other Fevers I think) are prejudicial; yet gentle, easy, moderate Sweats are always to be encouraged, particularly at the State, and in the Decline, by proper plentiful Diluents, liquid Aliment, &c. —Indeed, as these Fevers very often run out to a great Length of Time, supporting Drinks and Diet are necessary, without which the Patients certainly sink under them.—In this View, and in those abovementioned, I cannot but recommend a generous *red Wine*, as a most noble, natural subastringent Cordial, and perhaps Art can scarce supply a better.—Of this I am confident, that sometimes at the State, and more frequently in the Decline, of putrid malignant Fevers,

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Fevers, it is of the highest Service; especially when acidulated with Juice of Sevil Orange, or Lemon.—It may be also impregnated with some Aromatics, as Cinnamon, Sevil Orange Rind, red Roses, or the like, as may be indicated; and a few Drops of *Elixir Vitrioli* may be added.—I will not say in the Rant of *Asclepiades*, * *Utilitatem vini equari vix deorum potentia*; but it is undoubtedly of admirable Use not only in common Life, but as a Medicine.—*Rhenish* and *French* white Wines, diluted, make a most salutary Drink in several Kinds of Fevers, and generous *Cyder* is little inferior to either:—And, as I said above, sound, old, red Wine is a fine subastringent cordial Julep.—The *Asiatics*, and other Nations, where pestilential Disorders are much more rife than with us, lay more Stress on the Juice of Lemons in these Fevers than on the most celebrated Alexipharmac. It is not as to these only, but in many other Things, that we seek from Art, what all-bountiful Nature most readily, and as effectually, offers us, had we Diligence and Sagacity enough to observe, and make Use of them.—And I cannot but here take Notice, that I think the *dietetic* Part of Medicine is not so much studied as it deserves.—I am sure it is the more natural Way

* *Plinii Histor. natural. ex Edit. Harduin. Paris. 1723. Folio. Tom. II. p. 301.*

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of Cure, tho' less pompous indeed than alexi-
pharmac Bolus, febrifuge Draught, and cor-
dial Julep.

As I think the following Dissertations will
more fully illustrate and confirm the preceding
Doctrine, I shall here subjoin them.



A N



AN
E S S A Y
ON THE
S M A L L - P O X.



THE *different Effects* of the *same Disease*, on *different Constitutions of the Solids and Fluids*, is in no Case more evident than in the *Small-pox*.—For, *first*, when the variolous Contagion attacks a Person of strong tense Fibres, and a rich dense Blood, commonly a smart inflammatory Fever ensues; in which sometimes the Lungs, sometimes the Brain, the Throat and other Parts are greatly inflamed, and on Bleeding you have a very thick inflammatory Blood; and you are many Times obliged to bleed repeatedly, unless you will suffer your Patient to be carried off by a raving Phrenzy, or choaked by a peripneumonic Inflammation.—Here the Pulse is rapid, full, tense; the Breathing hot, short, and laborious; the Heat very sharp and the Urine high-coloured; the Thirst great,
the

the Tongue dry and foul ; the Pain of the Head, Back, Loins, Limbs, exceedingly acute.—Under such Symptoms I would bleed in a Pestilence, or indeed any other Disorder whatsoever, or else the utmost Danger will arise from the inflammatory *Diathefis* of the Blood, abstracted from the Contagion.

But I can by no Means approve of the promiscuous Use of Bleeding, so commonly practised in all Attacks of the Small-pox.—For, 2dly, that Disease many Times comes on with the usual Symptoms of a slow nervous Fever, and the Sick are frequently a long Time *drooping*, as the Vulgar call it ; the Fever low, the Spirits sunk, the Pulse weak, quick and fluttering, the Countenance pale and fallen, the Urine crude and thin, no great Thirst, no great Heat, a continued Giddiness and Heaviness of the Head with Tremblings, a perpetual *Nausea* and Puking, universal Uneasiness, Weakness, Weariness, &c. I have several Times known Symptoms of this Kind continue for seven or eight Days together, and at last end in the Small-pox ; which almost always proved of a very bad Sort, pale, crude, pitted and *sessile*, never rising well, or maturing kindly, but continuing flat and flaccid, or running together in large watery Blisters, full of thin undigested *Ichor*, and so remaining to the very last ; whilst in the Face, from a deadly pale cadaverous

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rous Hue, they turned to a ghastly black, and very adhesive Crust, if the Patient survived long enough, and even then generally proved fatal.

3dly, Sometimes the Small-pox are attended with a Fever of the malignant or petechial Kind, in which the *Crafsis* of the Blood becomes quite dissolved, black and livid Spots appear, Hæmorrhages ensue, and the Pustules turn black, gangrenous, and often bloody soon after the Eruption, and that too sometimes when the Pox are very few and distinct.—Here then we find three different Kinds of Fevers produced by one Species of Contagion, and we are obliged in the Method of Cure to have a Regard to the particular Fever, as well as to the peculiar Nature of the contagious Disease.

By this we see how absurd the general Notion of either the *hot*, or *cold*, *Regimen* is in all Kinds of the Small-pox indifferently.—Sometimes Sydenham's Method may be proper, sometimes Morton's.—In a Word, the particular Case requires a particular Method, and the attending Physician is to shew his Judgment in adapting it rightly.

Tho' the Contagion of the Small-pox produces the same specific Disease, yet the Degrees of that Disease are vastly different.—Even the very same Contagion, in the same House, Family, or Village, frequently produces

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backwards

duces very different Kinds of Pox; some exceeding mild and distinct, some highly malignant and dangerous.— We see innumerable Instances where the first seized shall have a very favourable Kind, the subsequent a confluent, malign and fatal: This is every Day's Experience; and yet amidst all this, and from the very worst Sort, intermediate Instances happen of the most benign. — So that it is quite Demonstration, that the Constitutions of the particular Patients greatly diversify the succeeding Disease:—And it is so in all Cases; for even a common Scratch in one rankles and proves a stubborn Ulcer, in another a large lacerated Wound heals up with little or no Difficulty.— A common *Pblegmon* in one easily resolves, or suppurates kindly, in another it proves gangrenous, scirrhus or cancerous.

The Contagion of the Small pox doth not always bring on a Fever, at least to any considerable Degree, though it may ~~the~~ Small-pox; for many Children, and even grown Persons, have had them in the natural Way, in so mild a Manner, that they have had no perceptible Fever, nor scarce ailed any Thing previous to, or during the Course of them. — The variolous *Pus* oftentimes infects the Skin of those that have had them already, producing a great Number of Pustules, altogether similar to those of the Small pox, of the same Dura-

tion and Manner in Maturation, but without any Fever.—This is very common among those that attend and handle Persons ill of that Distemper, especially those who have fine and tender Skins. — Here the Contagion affects the cutaneous Glands, &c. only, and not the Blood, which had such an Alteration made in it by the former Small-pox, as not to be susceptible of it ever after.—There are some peculiar Constitutions, that will never receive this Disease; for several Persons never have the Small-pox, though frequently conversing with, and even attending People in them. I knew an *old Nurse*, and one *Apothecary*, who for many Years attended Persons (and a great Number too) in the Small-pox, and yet never had them. Nay many, that have industriously endeavoured to catch the Infection, by frequenting the Chambers of the Sick, have done it without Effect; — and yet some of these very Persons, some Months or Years after, have been seized with the Small-pox.— The variolous *Pus*, in *Inoculation*, will not infect every one; and it is well known the *Pus*, even from the same Person, produces very different Numbers of Small-pox in different Persons, and very different Degrees of Fever.—Upon the whole then it is evident, that the previous State of the Body, and Disposition of the Humors, greatly contribute to determine the Quantity and Quality of the Small-pox. —

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Not but that the contagious *Miasmata* may be of a much more virulent and active Nature at one Time than another, or during one Constitution of the Air than another: and indeed we actually find that it is so. — But even this may be very much owing to that peculiar State of the Air, inducing such or such Qualities into the Solids and Fluids, which render them liable to such and such peculiar Fevers: — For we find one Constitution of the Atmosphere disposeth to inflammatory Fevers, another to the slow nervous, remittents, intermittents, &c; and a third to the putrid, malignant, or petechial. — Now where the Contagion coincides, and co-operates with such or such a Constitution, it will be productive of such or such a Kind of Small-pox, or rather of such or such a Kind of Fever with the Small-pox. — For + surely we many Times observe a very untoward Fever to accompany the Small-pox, where very few, and very distinct, though of an ill Kind. — Indeed, I think, I have frequently observed the common epidemic Fever manifestly concurring with the Small-pox, and that the variolous Contagion only diversified the Disease; or rather the epidemic Fever was coincident with the Small-pox on the same Subject. — This was the Case very often in 1740, 1741, and 1745; when a violent epidemic Fever, of the pestilential Kind, raged *here*, chiefly among

the *Sailors, Soldiers and Prisoners* (especially in the last of those Years) who had commonly the most evident Symptoms of the malignant Fever with the Small-pox, which therefore proved exceeding fatal among them; whereas many Persons in the *Neighbourhood*, that had no Communication with the *Hospitals*, and were otherwise tolerably healthy, had a very favourable Kind.—And probably this malignant Fever was chiefly owing to the high scorbutic ill Habit of Body, Manner of Life, Confinement, &c. to which the above Set of People were Subject:—Though I think the Fever, * in 1740, was from another Original.

It should seem then, could we preserve, or produce, a certain peculiar Disposition of the Blood and Humors, we might elude the Force of the Infection:—And this indeed is talked of by some, but I think upon a very slight Foundation.—Some particular Preparations of the *Bark* and *Mercurials*, by Way of Antidote, have been thought successful, and I have known some Instances that inclined me to think so; but I am far from being satisfied so far as to advise, or depend on them.

In Truth, in different Constitutions, the very same Medicine shall have very different Effects, and it would be Madness to give the

* *Vid. hujus historiam, Obs. nostr. de Aere, &c. Vol. II. mense Junio 1740.*

Bark and cordial Corroborants to one of very strong rigid Fibres, and a very dense viscid Blood, by Way of *Prophylactic*, or *Preparative*; though they might be of much Service in a weak lax State of Vessels, and a poor watery Blood.—Would Mercurials be proper in a too loosely cohering dissolving State of the Blood?—Verily some bad Effects have been sometimes noted on the Use of them, particularly *Petechiæ*, Hæmorrhages, and profuse *Diarrhæa*'s in the ensuing Pox; though I am sensible, in other Circumstances, they may be very useful.—In Sum then, whatever can be done rationally in this Way, must be with a View to mend what is faulty, or supply what is defective, in the Constitution; so as either to fortify it against the Attack of the Disease, or to prepare it the better to cope with it, when it actually seizes.—Perhaps these few Hints may not be altogether unworthy the Consideration of those especially, who have the Preparation and Management of Persons to be inoculated.

I am persuaded, if Persons, regularly prepared, were to receive the *variolous Contagion* in a natural Way, far the greater Part would have them in a mild Manner; for undoubtedly a very bad Sort of Small-pox many Times arises from an Over-fulness of Blood, Acrimony of Humors, or great Loads of foul Matter in the first Passages; and very frequently Er-

rors are committed in Diet, Exercise, &c. after the Infection is first taken, which often prove of fatal Consequence in the Event.— From these, those that are inoculated are, and should be guarded, and hence the great Success of that Operation.—Not but that the mild Kind, from whence the *variolous Pus* is taken, and the very small Quantity of infectious Matter received by *Injition*, in Part also contribute to the Mildness of the Disease. — This perhaps is the whole of *Inoculation*, if you take in likewise this Consideration, that it is practised chiefly on the young, fearless and most healthy. —Innumerable Instances however have now sufficiently evinced the great Success and Advantage of this Method; and, granting all that Prejudice and Party have said against it, the Danger in the natural Way is at least ten to one, of what it is in this.

A particular Regard then must be had to the Constitution of the Patient, and the Constitution of the Air, if we would practise with Reason and Success in the Small-pox, and indeed in all other epidemic Disorders.

For, *first*, the robust and vigorous Constitutions have more viscid and dense Humors, and much more of the red, globular, compact Blood; and of Course are liable to a higher Fever and greater Inflammation than Persons of lax Fibres, and a poor watery Blood; and
for

for this Reason can better bear, in all Cases, Evacuations, especially by Bleeding.

In the former then it is prudent, on the Attack of the Small-pox, to draw off some Blood, and, if Symptoms run high, to repeat it. A full, tense, throbbing Pulse, great Heat, a difficult and hot Respiration, high Colour of the Face, Redness of Eyes, Phrenzy, &c. particularly demand it: An acute Pain of the Head, Inflammation of the Eyes, and Throbbing of the carotid and temporal Arteries, denote an Inflammation of the Brain, or its *Meninges*, which you can never be too earnest and early in endeavouring to remove. — After having drawn ^{an insensible} a proper Quantity of Blood from the Arm, ^{by the venous sin} Bleeding in the Foot hath generally an admirable good Effect.

Bleeding in such Cases doth not retard the Eruption, at least not beyond its due Time. — Where the Blood and Spirits are under a vast Agitation, and the Circulation excessively rapid, Nature is so much embarrassed, as to be unable to make a regular Expulsion of the morbid Matter, much less to *concoct* it, or even to perform the common natural Secretions: — In common ardent and inflammatory Fevers you are many Times obliged to bleed once and again, before you can procure the least Sweat. — Besides, some Degree of *Cottion* is necessary in all critical Eruptions, at least in such

such as prove salutary ; and therefore you have generally more or less of a Sediment in the Urine just before, or at, the Eruption, and the Fever subsides.— Where all is in a Hurry, and the Pox are pushed out too soon, frequently even within thirty Hours, the Fever continues, and the Event is almost always fatal.—Nor will Bleeding, under the above Circumstances, weaken the Powers of Nature ; but, by calming the over-violent Motion of the vital Fluid, and causing a more regular Secretion of the animal Spirits, it will relieve, nay support her in her Work.

Bleeding in the Foot is known to make a very powerful Revulsion from the Head and Breast, Parts we should endeavour to guard, as much as possible, against the Violence of this Disease. — And, to this End, I would recommend also Bathing the Feet and Legs in warm Water, or Milk and Water, for a few Minutes, two or three Times a Day, before, and at the Eruption ; and would likewise have *Cataplasms of Milk and Bread, boiled Turneps*, or the like, applied to the Feet.— This Practice I have for many Years used with Success, and particularly recommended in a short Account of an anomalous Small-pox, that raged *here* in 1724 and 1725 * — This draws the Blood in greater Quantities to the lower Parts, and of

* *Philosoph. Transact.* No. 390.

Course relieves the Head and Breast; and, as it brings down more Blood, it brings down also more of the variolous Matter to those Parts, and, what is more, facilitates its Eruption on them; which lessens the Quantity, that might otherwise break out about the Head, &c: At the same Time the relaxing Quality of the tepid Bath tends to calm the Impetuosity of the Blood, and in some Measure also dilutes it. It is certain, where this Method is used, a vast many Pox break out on the Legs and Feet, and sometimes on the Application of the Cataplasms very severe Pains affect them.—It is the Number of Pustules about the Head, Throat and Breast, that are so justly to be feared: A common *Erysipelas* of the Face and Head is vastly more dangerous than on the inferior Limbs.—The Head therefore should never be kept too hot, but should be shaved antecedent to the Eruption, especially where there is much Hair; this not only keeps the Head much cooler and less liable to be over-run with Pustules, but likewise prevents many troublesome Accidents in the Course of the Disease.

If, notwithstanding the Fever continues to run high, the Eruption doth not regularly advance; I would not only advise Bathing the Legs and Feet, but the Arms and Hands, nay and even the Trunk of the Body also.—This I have had Occasion to practise more than once
in

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in some Children, who, from being used to the *cold Bath* for ricketty Disorders, had their Skin rendered more dense and hard than natural, which probably retarded the Eruption beyond the due Season. In one of these (now a strong lusty Gentleman) the Pox did not appear till the sixth Day, tho' he had a very smart Fever from the Beginning; and then, on bathing him up to the Breast in warm Milk and Water, the Pox came out forthwith, very kindly, tho' pretty numerous.—Bathing the Body in this Manner not only tends to relieve the Head and Breast, but it also draws out the morbid Matter, and promotes its Eruption on the external Habit, by which the internal and more vital Parts are less liable to the Ravage of the Disease: It is too often found that the *variolous Pustules on the Lungs, Viscera of the Abdomen, &c.* produce mortal Effects.—This is not altogether a new Method: for *Rhazes* * advises the Patient to be kept in a kind of *Balneum Vaporis*, to facilitate the Eruption.

Many Times the Strong and Plethoric fall into a vast Dejection of Spirits, and a general Debility, attended with a heavy oppressed Pulse, at the very Seizure with the Small-pox; which makes the less experienced Practitioner very diffident as to Bleeding, tho' here equally neces-

* *Vid. Rhaz. de Variolis & Morbillis Cap. vi. ex Edit. Mead.*

sary, and nothing sooner relieves them, especially when this, in great Part, arises from Fear and Dread of the Disease : which is very often the Case with adult Persons, who by the bye can best bear Bleeding, unless very old. For not only the Contagion itself perhaps primarily affects the animal Spirits, but the very Fear and Concern also so disturb and weaken the Powers of Nature, that the Heart and contractile Vessels exert much less Force on the contained Fluids ; whence the regular Secretions and Excretions are considerably diminished, particularly those important ones, the nervous Fluid, and Perspiration : so that hence the *Moles movenda* is encreased, and the *Vis motrix* lessened.—Drawing off Part therefore of the encreased Blood, under such Circumstances, is in Event equivalent to an Encrease of the moving Force.—Besides, when Part of the viscid Humors is drawn off, the remaining are more easily attenuated, and rendered more fit to give off the actuating Principles, or animal Spirits, in due Quantity. — Some Blood therefore, in such Cases, should be drawn as early as possible, but not in too large Quantities at once.—It is certainly better to repeat the Bleeding, if necessary, at least to stop the Orifice now and then ; for by this Means you avoid the Fainting, which otherwise frequently happens, unless the Patient is bled in a recumbent, or lying Posture.

But

But further, where immoderate Fear and Dejection of Spirits concur with the Disease, there is really oftentimes a Necessity of giving something of a cordial Nature, even at the very Beginning, and that too sometimes even not sparingly. Now when the superabundant Quantity of the Blood is drawn off, these invigorating Medicines may be used with greater Safety and Advantage; and I have many Times seen exceeding good Effects from them, where the Pustules, thro' excessive Fear, and Oppression of Spirits of the Patients, lay buried in the Skin, as it were, and made no considerable Advance for two or three Days together. — I am no great Advocate for the *hot Regimen*, especially at the Beginning of the Small-pox; but I know this must be done in such Cases, and Blisters must be applied to rouse the sluggish Oscillations of the Vessels, or the Patient certainly sinks under the Malady. — Yet in general, I am not fond of Blistering very early in the Small-pox, unless there is great Reason to fear that the Tongue, *Fauces*, and narine Passages, are otherwise like to be greatly infested with them: When the Disease attacks with a Rawness, Soreness, or great Heat of the Mouth and Throat, and a considerable sharp *Rheum*, or Stoppage in the Nostrils with frequent Sneezing, and a tickling Cough; this is to be expected, unless prevented by

by

by timely Blistering, which I have often found very successful.—A great Sneezing, and sharp *Rheum* from the Mouth and Nostrils, shew that the *Membrana Schneideriana*, the common Lining to all these Passages, is greatly affected, and that a Revulsion from it is indicated; for even a few Pustules in the Throat and Nostrils are of vastly worse Consequence than a hundred Times the Number on the external Habit: Great Pain and Difficulty of breathing and swallowing are the certain Effects, especially towards the Close of the Disease; which frequently quite choak the Sick, unless you are exceeding diligent with your Gargles, Syringing, &c.—Sometimes I have known such a violent Defluxion on these Parts, as to cause a very profuse Salivation even at the very Beginning; which hath kept the Patients constantly awake, excoriated the Tongue, Lips and Throat, and brought on such excessive Pain as utterly to deprive them of Sleep, and make Swallowing any Drink, Aliment, &c. almost intolerable: Here early Blistering in the Neck, behind the Ears, &c. is indispensably necessary.

But secondly, when Persons of weak lax Fibres, and a poor thin Blood, or those, who have undergone lately great Evacuations, are attacked with the Small-pox, withhold your Lancet as you tender the Life of your Patients.—These generally have a sunk pale Countenance, a weak,
quick,

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quick, trembling Pulse, very great Dejection of Spirits, with a pale crude wheyish or limpid Urine, alternate Chills and Heats, little Thirst, and no great Pain, but a perpetual Heaviness and Sickness at Stomach, Giddiness, &c. Here, I pronounce it, *Sack and Saffron* are not improper, with some easy, cordial, nervous Medicines, Sack Whey, Wine and Water, or the like.— But all this may be done without large Doses of volatile alcalious Salts and Spirits, Snake-Root, Brandy, strong Wine, &c.—And yet I have seen pretty large Quantities of Wine given in some low depressed Cases, with very great Advantage: Blisters also may be here applied, and stimulating Cataplasms to the Feet; Bathing seems not so proper.

There is one Thing in a peculiar Manner, that greatly promotes the variolous Eruption in these low slow Cases, where the Pustules do not break forth in a regular Manner, at the usual Season, but lie buried in the Skin with little or no Protuberance, and less Colour; and that is *Vomiting* by a *gentle Emetic*.—Nature almost always makes this Effort spontaneously in this Disease, and I think we should follow the *Indication*; for it not only in Part throws off the morbid Matter, which primarily affected the Stomach, but also the heavy putrid bilious *Colluvies*, that may have been collected in it, the Liver, Gall-Bladder, &c.—It is very notorious

rious that the Action of Vomiting forces off through the Skin, Perspiration, Sweat, Pustules. — I know it is objected, that Vomiting drives up too much Blood to the Brain; and therefore is improper in the Beginning of the Small-pox: and I think so too, if done antecedent to Bleeding in plethoric Constitutions; nay I have known very terrible Accidents ensue, where thus injudiciously managed. — But let it be considered, that, without the Solicitation of Art, Nature is always at it, and makes almost perpetual, tho' many Times vain, Endeavours to discharge the Stomach: Now it is certain, that by co-operating with her Motions, and assisting her Effort with a proper *Wash*, we greatly help her Attempt, and the Vomiting even ceases much the sooner; and it is observable, that on the compleat Eruption the Vomiting goes quite off, but even that is by this Means very much promoted. — I would have the Cataplasms to the Feet immediately succeed the Emetic, for Reasons that are very obvious.

The Emetic hath commonly the further good Effect of producing a Stool or two, by which the Intestins are unloaded of gross, indurated Excrements, or any putrid bilious Contents; if this doth not happen, an emollient laxative Clyster should be forthwith given: And, in many Cases, a gentle, easy, cool Cathartic of Manna, Cream of Tartar, *Glauber's* Salt, or Rhubarb

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Rhubarb is necessary ; even if a Diarrhoea is urgent, a Dose or two of Rhubarb should be given.

Different Constitutions of the Air have different Effects on the most healthy, much more on the sick and weak, and of Course on Diseases. — It hath been long observed, that one Constitution of the Atmosphere promotes, another retards the Progress of epidemic Disorders, particularly of the Small-pox ; which at one Time begin in the remotest Corner of a Town or City, and soon ravage the whole ; at another they are carried into the very Heart of them, and yet presently cease. — The Plague itself is commonly stopped, by a Change of Air from hot and moist to cold and dry. — The very State of the Blood greatly depends on the precedent and present Constitution of the Air, and it hath been proved, that the Contagion hath different Effects on different States of the Blood. — A due Consideration therefore of the present, and preceding Constitution of the Air, is of no small Import in our Method of Cure.

As a continued cold dry Air makes the Fibres strong and very elastic, and the Blood dense and viscid ; one may reasonably conclude, that Patients, in such a Constitution, will *cæteris paribus*, more need, and better bear Blood-letting, than in a warm, moist, relaxing State of the Air ; and that they will want more of the
diluting,

diluting, emollient *antiphlogistic* Drink, Diet and Medicines: whereas in the latter something more cordial, subastringent and *antiputrescent* will be requisite.

It is certain, in very cold and dry Weather, as also when very hot and dry, Persons in the Small-pox spit vastly less than in the opposite Constitutions of the Air; so that in a very dry Atmosphere all proper Means should be used to dilute the Humors, and promote *Salivation*, so necessary and salutary in this Disease: — This however in some Seasons, and some Persons, is vastly too profuse and prejudicial; I think more particularly in coldish, moist, slabby Weather, and in Persons subject to catarrhal Disorders.—I have many Times known the *Salivation* begin so soon, and continue so immoderate, as at length to abrade the common Invelop of the Tongue, Mouth and Fauces, causing most exquisite Pain, preventing Sleep and Swallowing, and keeping the Patients in a perpetual Torture. — And therefore I always dread a *premature Salivation*, especially when profuse and very acrid.

As some Constitutions of the Air hinder a sufficient Salivation, others dispose to too much, and that too acrimonious: An epidemic Catarrh shall at one Time be only a Discharge of a thin, soft, insipid *Mucus*; at another, a profuse acrid *Gleet*, excoriating the Nose, Lips, Fauces, &c.

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—Probably such a Kind of Atmosphere, as disposes to excessive Salivations, may in Part also be productive of that crude, *crystalline, undigested Pox*, which we too frequently meet with. For a moist, slabby, chill Season not only too much relaxes the *contractile* Vessels, and impregnates the Blood with the cold nitrous Vapors; but withal greatly obstructs Perspiration, whence a sharp, serous *Colluvies* is accumulated: and it is chiefly, in such Seasons, that this Sort of Small-pox is predominant; as the small, warty black Kind, with little or no Salivation, is most commonly observed during a long continued Course of dry North-Easterly Winds, very hot or very cold dry Weather.—Doth not this Observation hint to us the different Regimen necessary in different Seasons?

These *crystalline*, or *lymphatic* Pox never mature kindly, but the Matter remains crude, and a mere watery *Ichor* to the last, and in many Places they run one into another, and form very large Vesications; which at length breaking and corroding all around them, the Patient is ulcerated all over, and appears like a flead Rabbit.—I have seen some running down under such a Kind of a *Tabes* for twenty or thirty Days together, the sharp Humors ouzing out, and dripping from them continually, till at last they have been *dissolved in a double Sense*.—Very frequently

frequently a great Part of this thin crude Matter is re-absorbed into the Blood, and leaves a vast Number of the Pustules flaccid, empty, or *siliquose*, as they call it. This creates terrible Disorders, and plays over the Tragedy again, which generally ends in a fatal *Catastrophe*; convulsive *Rigors*, peripneumonic Fever, Delirium, Dysentery, *Syncope*, &c. are the common Consequences.—However when it goes off by a moderate Diarrhœa, or a very plentiful Discharge of full-coloured subsiding Urine, the Sick very often recover; but when the Stools are black, bloody, or sanious, they generally indicate a Mortification of the Intestins, especially if the Abdomen is swoln, painful and tense.—And a *Micturition*, or perpetual Urging to Urine, without any considerable Discharge, is a very bad Symptom, unless it arises from Blisters.—If ever large Sweats are useful in the Small-pox, it is in this Kind of them; and I think I have found them several Times greatly advantageous.

In this *crude, ichorose, indigestible Pox* and profuse *Ptyalism*, where the Skin and Pustules are pale, or lurid, the Pulse weak, the Urine thin, watery, crude; the warmer Medicines are necessary: such as *Pulv. Contrayerv. c. Myrrh, Musk, Saffron, Camphire, Theriaca, Mitbridate, Confectio cardiaca*. These are of vast Service in raising the Pustules, and digesting the Matter, and may be washed down with Sack-whey, *Decoct. rubicund.*

a temperate testaceous Julep, or a *Dish of Coffee* now and then with a little thin Milk in it; which I have known, more than once, drank thro' the whole Course of the Small-pox with no ill Effect, nay with a very good one; as it manifestly quieted the tickling vexatious Cough caused by the sharp thin Rheum.

Here also without Doubt Opiates are strongly indicated, and *Theriaca*, *Elixir paregoricum*, or *Tinctura Thebaica* should be given with *Diacodium* frequently, but in such Doses as to quiet, not stupefy the Patient; which indeed is the most safe Method of giving Opiates in all Sorts of Fevers, and ultimately the most effectual; for tho' a large Dose at once may more immediately procure Sleep, yet it is much less refreshing; but, when it doth not, a Delirium is almost always the certain Consequence, or a long continued Stupor. — In all Events great Doses cause very great Relaxation and universal Debility, which nothing but a fresh Dose after some Time, or a warm Cordial will relieve: They are similar in Effect to large Doses of *spirituous Liquors*, which produce temporary Madness, or Stupor, ending in general Weakness, Tremors, and the utmost Dejection of Spirits. — Besides, no one can say, what Effect a particular Dose of Opium will have on a particular Person, till he hath tried it: Some have such a peculiar Disposition, that a very small Dose

Dose will greatly affect them; whereas others of nearly the same apparent Strength, Constitution, &c. will take four Times the Quantity with vastly less Effect. — Some bear *Diacodium* that cannot touch *Opium*: So that it is always prudent to begin at least with moderate Opiates, and in small Doses.

Yet notwithstanding this Caution, there are no Medicines whatever that incrassate thin acrid Humors, abate their Irritation and Defluxion, and maturate the Pustules so effectually as Opiates properly given. — In Truth, when the Pustules are numerous, we can do very little without them, especially towards the State of the Disease, when they become exceeding painful. — And yet even here, when the Salivation is extremely viscid and difficult, and the Respiration short and laborious; we should be very cautious in using them, and join with them *Gum ammoniac*, *Oxymel scilliticum*, &c.

Nor must we in this *lymphatic*, or *crystalline Pox* be sparing of Blisters, which, besides their other good Effects, give a copious Vent to the acrid morbid Humors; and for the same Reason the large Bladders, which the Pustules cause by running together, should be opened with a Lancet. — Letting out the Matter with a golden Needle, as * *Avicenna* advises, is more nice than

* *Avicenna Canon. Medic. Lib. iv. Cap. de Variolis, p. 66. ex Edit. Plempii.*

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necessary. Do it as you will, a worse *Cicatrix* follows than when committed to Nature: But here the Danger supersedes that Consideration; for a Mortification is sometimes brought on by the corrosive Matter, and some of it withal is continually re-absorbed into the Blood.

I would also advise some proper Diuretics to be joined with the alexipharmac Medicines, as *Nitre*, *Sal Succini*, *Spirit. nitri dulcis*, and the like. For I have many Times observed a plentiful Flow of Urine very happily compensate the Deficiency of other Evacuations: and if this happens when the Salivation begins to cease, and the Face subsides, it is always salutary; and, as it is so, it should be promoted as much as possible; and the Sick should be frequently prompted to discharge it, which is greatly facilitated by getting them up on their Knees. For, whilst lying in Bed, they have many Times neither Inclination, nor Power, to make it; and yet immediately, on being lifted up, they shall render it in a large Quantity.

Nothing is more common than for the thin, acrid, variolous Matter to take a Turn down the Intestins, and very often in a very violent Manner.—Innumerable Instances have occurred in the Small-pox, where a critical Diarrhœa hath saved the Life of the Patient; Nature even substitutes this Discharge in Children, for the Salivation in Adults. — We should be very
careful

careful therefore never to suppress it too hastily; and even when it is profuse, we should not attempt it, till we have premised a Dose or two of Rhubarb; and then indeed proper Astringents, Opiates, *Decoct. rubicund. Decoct. Fracast. Tinct. Ros. &c.* may be used; and, when every Thing else fails, a Clyster with *Diascordium*, or *Theriaca*, will stem the Torrent. But in general we should only moderate it, especially at, or after the State, taking Care however to support the Patient during the Flux with a proper strengthening, subastringent Diet.

I never observed either the *vegetable* or the *mineral Acids* of any great Service in the crude crystalline Pox, but I have often found them highly useful in the *small, black, confluent Kind, with Petechiæ*; in which the Putrefaction of the Humors in general seems much greater, and the Matter of the Pustules is vastly more foetid and sanious than in the *crystalline*, the *Ichor* of which many Times hath little or no Stench at all.— Tho' perhaps scarce one in four recovers from this small, black, confluent Kind (and when attended with black Spots, bloody Urine, and other Hæmorrhages, scarce one of a thousand) yet sometimes great Things have been done by mineral Acids, astringent Alexipharmacs, and Preparations of the *Cortex Peruv.* when the *Petechiæ* have been numerous, and the Small-pox very black, small and confluent, nay and even

attended with some Degree of Hæmorrhage.— I have known some Instances of a Recovery, under these Circumstances, by those Methods ; but never met with one, who survived the Disease, that made bloody Urine, unless it was manifestly from *Cantharides*.—— But as this Kind of Pox is of very long Duration, and the Patient (if he at length gets over it) continues between Life and Death as it were for many Days together ; the above Medicines are not only necessary, but he should be also plentifully supported, in the *last Stadium* especially, with proper *analeptic* and *antiseptic* Drinks and Diet ; till at last, like the Serpent, Emblem of recovered Health, he crawls out of the *black Exuvie* into new Life and Vigor : and truly I have seen some Cases, which seemed more like a Resurrection than a Recovery.

When I recommend the Use of the *Bark*, in some Kinds of the Small-pox, I do it upon sufficient Experience and Authority ; whoever is not satisfied with mine, may consult the great Dr. *Mead**, Prof. *Monro*†, and Dr. *Wall*§ on this Matter.— I commonly begin with the *alexipharmac Tincture of the Bark* above described, well acidulated with Elixir of Vitriol ; and then proceed to the Decoction, or Extract, if necessary.—But let me strongly caution against giving

* *De Variolis & Morbillis*, p. 45.
Vol. v. p. 102.

† *Medical Essays*,
§ *Philosoph. Transact.* No. 486.

any Thing of this Kind, where the Respiration is difficult, the Body very costive, and the Abdomen hard and tumid, at least till you have removed those Symptoms.— I must add, that the *Tinct. Cort. alexipharm.* is particularly serviceable in the *lymphatic Pox*, and should be given soon after the compleat Eruption, to promote, as much as possible, some Degree of Maturation: It is certain the *Bark* commonly brings on a laudable Digestion in gleety Ulcers.—*Morton* * gave the *Bark*, not only in the *Decline*, but during the *Maturation* of the *Pox*, if he found any Remission; and that too every third or fourth Hour, to the Quantity of a Drachm; and I know this hath been practised many Years ago with Success by some other eminent Physicians.

The great Difficulty and Danger of this Disease chiefly comes on at the *State*, or *Turn* of the *Pox* (which happens much sooner in some Kinds than in others, the milder the *Pox*, always the sooner); for however easily Matters may have proceeded till this Time, we are now (*viz.* the seventh, ninth, or eleventh Day from the Eruption) very often surpris'd with a very shocking Change, and terrible Symptoms. The Swelling of the Face sinks at once, the Salivation suddenly ceases, the Pustules grow

* *De Variolis, cap. ix. p. 250.*

flaccid,

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flaccid, the Interstices pale, lurid, or ash-coloured ; a Rigor comes on, a Fever succeeds with great Difficulty of Breathing, Faintness and Sicknes ; a perpetual Anxiety, Tremors, Subsultus, Delirium, &c. soon follow.— Such a Change is to be expected, if the Pustules break out very numerous the first, second, or third Day from the Seizure ; if after the compleat Eruption they do not fill well, keep up round and properly pointed, but grow flat, and run abroad, or have a small *Dimple*, or *black Speck* in the Middle ; if they are not surrounded with a *florid Base*, and look themselves wan, or darkish coloured : —If the Urine withal hath continued, or grows pale, crude and thin, and the *carotid* and *temporal Arteries* throb much, no small Danger is impending.— Here then the Physician must in a more especial Manner watch his Patient with the utmost Diligence ; for the Affair of Life and Death is now to be transacted in a few Hours : — and, though no absolute Rules can be well laid down in a Disease, that is attended with such a great Variety of Accidents as the Small-pox ; yet perhaps the following Hints may not be altogether useless.

1st,—If the Swelling of the Hands doth not regularly succeed the Tumor of the Face, and the Swelling of the Feet that of the Hands, it is justly reckoned an ill Symptom ; for this is a regular and critical Translation of the morbid

bid Humors to those Parts, and commonly happens when the Salivation begins to abate, and the Face subsides. Where therefore Circumstances are threatening, I would advise the Application of Epispastics to the *Wrists and Ancles*, a little before we expect the Tumor of the respective Parts should come on; for these not only more certainly draw the Humors there, but also give them Vent: And I think the Use of emollient *Cataplasms*, or *Fotus*, to the Parts should for some Time precede the Blisters, as they would also tend to solicit these critical Tumors. — *Baglivi* * says he ordered Sponges soaked in emollient Decoctions with great Success. — Sometimes indeed Nature, of her own Accord, throws the morbid Matter on the Extremities with such Violence, as to create great Inflammation, Tumor and most exquisite Pain; which nothing will so effectually relieve as emollient Fomentations, by relaxing the Parts, and opening the Pores.

The foregoing Method I recommended above twenty Years ago †, and have since practised it in Abundance of Instances with great Advantage. — The premature Recession of critical Tumors is always of very dangerous Consequence, witness even the common Gout: insomuch that we are many Times obliged to fix it by acrid

* *De Variolis & Morbillis.*

† *Philosoph. Transact.* No. 390.

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Cataplasms. — In the above Case Blisters not only attract, but discharge, the morbid Matter. I very frequently add *Cantharides to the Cataplasms*; and I find it is now a Practice with some very great Physicians to apply Blisters to the Soles of the Feet, in Cases of Danger.

2dly, — If Heat, Head-ach, Sicknefs and Load at Stomach, great Restlessness, or Stupor, come on about the sixth or eighth Day from the Eruption, the Body being costive, as most commonly it is; a plain Clyster of Milk, Sugar and Salt, seldoms fails of giving immediate Relief: and this is especially necessary, when the Sick make frequent but vain Efforts to Stool. For the Excrements, baked up by Heat and long Retention, are crowded into the *Colon* and *Rectum*; where pressing on the Bottom of the *Aorta*, *Iliacs*, and Neck of the Bladder, they hinder the free Descent of the Blood to the lower Parts, whence the Head and Breast are overloaded: Besides they suppress the Urine, and neither Wind, Stool, nor Water, can be discharged till the indurated Excrements are softened, and the Guts relaxed, lubricated, and irritated to their Office by a proper Clyster. — Indeed I seldom suffer my Patients, particularly young Persons, to grow so exceeding costive: for I generally order an emollient Clyster, if necessary, to be injected every second, third, or fourth Day from the very Beginning, till I
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enter on the Use of gentle Purgatives ; which keeps the Patient much cooler, and renders the Use of Anodynes much more safe and effectual : For very often they will have little or no Effect, till the Body is unloaded, or bring on a comatose Disposition.

And yet, 3dly,—Anodynes are almost always proper, nay necessary, in the Small-pox, especially at and towards the Crisis : were it for nothing but to assuage the Pain from the Inflammation of the Skin and Pustules, they would be required ; for if one Boil is attended with so much Uneasiness, what will ten thousand occasion ? However the Pain and Soreness complained of, is generally a good Symptom : — It is certainly a very bad one, when neither the Skin nor Pustules inflame or grow painful ; for it argues a great Deficiency of the *Vis Vita*, Want of a due Circulation in the extreame Capillaries, and an universal *Torpor*.—Let me further add, that towards the State especially, the Opiates should be given early in the Evening, before the Exacerbation comes on, and in larger Doses ; and if Need be, oftener repeated.—*Diacodium* here seldom proves sufficient, unless in Children.—The Dose of the Anodyne particularly should be always encreased the Evening before we expect the Crisis, in order to quiet the Tumult, which generally comes on
the

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the ensuing Night; for, as *Hippocrates* * observes, the Night before the Crisis, in all Fevers, is most troublesome. When the Patient is very feverish and hot, I find it best to give the Opiate with some *Acid*, or out of a *saline Draught*; but, when low and languid, with *Theriaca*, or some *Alexipharmac*.

4thly,—If at the Approach of the secondary Fever the Pulse beats very quick, hard and strong, the carotid Arteries throb greatly, the Heat grows intense, the Breathing very difficult, and an acute Pain of the Head, or more or less of a Phrenzy comes on; you are to bleed immediately, or in a very short Time the Case will be irrecoverable. — It is observable, that the Blood drawn, under such Circumstances, is extremely viscid, and as buffy as in the highest Pleurisy: It is very evident, that it is in a very inflammatory State, from the Ophthalmies, Quinsies, Peripneumonies, Rheumatisms, and external Inflammations, which commonly succeed.

But 5thly,—If on the contrary the Pulse flags, the Patient faints, the Pustules and the Interstices grow pale, shrivelled and sunk, or livid, the Extremities coldish or clammy; you can scarce give too warm Medicines, Drinks, &c. nor apply too many Blisters: I have seen

* *Aphorism* 13. *Seet.* ii.

very large Quantities of warm Wine given under such Circumstances with surprizing Success.

6thly,—About the Close of the *third Stadium* of the Small-pox, the Salivation commonly abates much, and the Matter very often grows so exceeding thick and glutinous, that it is spit off with the utmost Difficulty, and threatens Suffocation every Minute almost, unless perpetually deterged by proper Gargles, Syringing, &c.—I know no Gargles better in this Case than Cyder and Honey, or Vinegar, Water, and Honey, or *Oxymel scilliticum*, with a little Nitre or crude *Sal ammoniac*. Mustard also may be boiled with Advantage in the Gargles, when a stronger Stimulant is wanting—The vegetable Acids are much more saponaceous and absterfise than Spirit of Vitriol, though more commonly used.—Many Times all these are ineffectual, and nothing but an actual Vomit will relieve; Sydenham vomited in this Case with *Vinum benedictum* to ʒiss. —We have much milder but equally efficacious; nay *Oxymel scilliticum* frequently given many Times succeeds, by gently puking, and easing both Expectoration and Respiration.—Besides it hath the further Advantage of promoting Urine and Stool, which are very often deficient at this Time of the Disease; but, when the Case is urgent, it should be quickened by a Decoction, or Infusion of *Ipecacoanha*. I have had Honesty and
Resolution

Resolution enough to put this in Practice several Times, where this was the *derniere Ressource*, and thereby have sometimes evidently snatched my Patient from the Jaws of Death, though at the Risque of my own Reputation; but truly sometimes also I have lost both. — But I shall ever be of *Celsus*'s Opinion, to try a doubtful Remedy rather than none. — It is not very uncommon to find the Tongue and Fauces covered with a vastly thick, adhesive, whitish, or brown *Pellicle*, so that they look as if they had been *parboiled*; and the *Oesophagus* and *Aspera Arteria* are commonly in the same Condition: This neither Vomit, Gargle, nor aught else will remove, and is a very bad Symptom, as it shews there is no Manner of Secretion through the Glands of the Parts.

The great Tenacity of the Mucus of the Mouth, Fauces, &c. many Times arises from Want of drinking freely, through the Course of the Distemper.—But this is absolutely necessary to dilute the Blood, support the Salivation, fill the Pustules, wash off the morbid acrid Salts, and supply the Vessels with more wholesome Fluids: The very Aliment in this Disease should be, nay must be, chiefly liquid; as Solids, for the most Part, can be neither relished, nor swallowed.—In the black, confluent Small-pox you must drink, or die: — Thin acidulated Whey, *Decoct. Lusitan.* Gruel, or
Water

Water with Rhenish or small French White-wine, Cyder and Water, or the like, are exceeding proper; and if either Petechiæ, or Hæmorrhages, appear, Tincture of Roses, or Claret and Water well acidulated.

But, 7^{thly}, — When the Incrustation is perfectly formed, and the Salivation abates, we must study to promote some other Evacuations; for nothing now is to be further thrown off on the external Habit, little or nothing now can transpire through the crusty, scaly Skin, which envelops the Body like a Coat of Mail, or rather, in its Consequences, like the poisonous Shirt of *Hercules*: for it not only vastly hinders Perspiration, but also confines the *Pus* and *Sanies*, which grow every Hour more and more putrid, and, being continually resorbed into the Blood, bring on, feed, and augment the secondary Fever.

If we can keep up the Salivation, and promote a due *Flow* of well concocted Urine, at this Period, Things go on tolerably well; but, very often, they both greatly fail all on a sudden, and the Patient falls into the utmost Danger. — Here all Endeavours should be used to renew these Evacuations; more Blisters should be forthwith laid on, and an emollient laxative Clyster immediately injected: Expectorating Mixtures likewise of *Oxymel scilliticum*, *Lac ammoniac*. &c. should be frequently used.

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Moreover,

Moreover, it is of no small Advantage at this Time of the Disease to shift the Linnen of the Sick, which is now grown exceeding foul, stiff and stinking, and become vastly uneasy to them: — Besides it very much pollutes the Air of the Chamber, and renders it so very unfit for Respiration, that even the most Healthy can scarce bear it; nay it not only hurts the Breathing, but the *Miasmata* of this poisonous *Me-phites* are continually passing into the Blood again through the *Vasa inbalantia*, Lungs, &c. and further corrupt the Blood. It is surprising to find how greatly the Sick are refreshed on changing the Air of the Room, by prudently opening the Windows and Doors, and removing the stinking Linnen, &c: — They have new Life, as they frequently and properly express it; for fresh Air is the Breath of Life. — It is certainly of the highest ill Consequence to confine such putrid Air, and the Sick in it. — The absurd Method of making a Kind of *Hospital Chamber* in a House, and crowding up two, three, or more Sick in it, is a most dangerous Practice, and I have often known it manifestly fatal: — The Stench, the Groans, the Cries of one disturb and offend the others; it is rare that they sleep all together, but they are too often kept waking so: It is bad Living by such bad Neighbours. — Whatever may be pretended, there is no Manner of Danger in shifting
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ing the Sick, provided it be carefully done into very dry warm Linnen; but it is a silly Notion to have the Shirt, or Shift, worn by another Person for twelve or twenty-four Hours before it is put on the sick Person.—Can it not be made fully dry and warm without so doing? Will not the Perspiration, or Sweat, of the most Healthy dirt and damp it?

But of this enough: I return to the Affair of Evacuation, and shall conclude this Head with some Observations on Purging in the secondary Fever of the Small-pox.

When the Salivation proceeds regularly, the Pustules keep up and maturate kindly, the Swellings of the Face, Hands and Feet come on in due Season, and the Patients sleep quietly, and breathe freely; all Things are well, and Nature is most effectually doing her own Work, and should be properly supported in it, but never disturbed.—Here I even abstain from Clysters, though the Patient may have been costive for several Days together, till after the compleat Incrustation; and then they are proper to prepare for the succeeding Purges, which without all Doubt are then necessary.

But it very often, nay almost always, happens in the *coherent* and *confluent* Pox, at, or before, this Period, that more or less of a *secondary Fever* comes on; partly from the Resorption of the Matter of the external and in-

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ternal Pustules, partly from the suppressed Perspiration, and partly from the putrid *Colluvies* of the intestinal Canal; which cannot but be very considerable, as undoubtedly Part of the morbid Matter, separated by the Glands of the Mouth, Fauces, &c. is swallowed, and a great deal more must be secreted by the Glands of the Guts, biliary Ducts, &c. into the Intestines: For, as vastly less than usual now passes off through the Skin, a much greater Quantity of Humors must fall on the Bowels; it being a well known Maxim, that the Lessening of one Evacuation is the Encrease of another, and also that there is a peculiar Consent between the Skin and the Guts: To all this likewise is added the purulent Matter of the variolous Pustules, that may happen to be in the Stomach and Intestines. — So that there cannot but be a great Lodgment of very putrid Matter in the first Passages, which grows the more and more virulent, the longer it continues there, and is perpetually passing again into the Blood, through the *absorbing Vessels of the Guts*, and becomes a Fuel to the Fever, which Nature endeavours even this Way, partly at least, to throw off.—Should it remain there then, or should it be carried off? The Answer is obvious. — Nature of her own Accord commonly attempts it with the greatest Advantage in the Adults, and almost always in Children, to whom

whom a Diarrhœa is a Kind of *succedaneum* to the Salivation of elder Persons. — Is not this then a sufficient Indication how to relieve her at such a Juncture? And in Truth, what horribly foetid, putrid, large Stools do we observe in this Distemper, on the Use of a Clyster, and more especially after a Purgative, I mean at the State, or in the Declination? Nay this Mass of Corruption lying long in the Guts, and growing daily more putrid, becomes at last so extremely acrid as to corrode them; at least so greatly irritates them, as to bring on that very Diarrhœa, or Dysentery, which some so vainly fear will arise from a gentle Cathartic.

But further, if Nature, neither by her own Effort, nor the Help of Art, is capable of keeping the morbid Humors from falling on the more vital Parts, but, from an unfortunate Translation of it, is like to sink under its Weight; as upon a sudden Retrocession of the Tumor of the Face and Hands, a premature Suppression of the Salivation, or the like; doth it not seem necessary to carry off the offending Matter by some other Outlet, as particularly by the Guts, which are much more easily and certainly solicited to a Discharge than the Pores of the Skin, the urinary Passages, or the *salivary Ducts*? — Indeed when the Salivation of Course ceases, in my Opinion, it seems proper to promote some other Evacuation in its Room;

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and if we use a Clyster, or a gentle Purgative, we may readily restrain too great a Discharge by an Opiate.

It hath, and may be objected to this Practice, that it tends to draw the noxious Humors from the external Habit to the Vitals. — But to this I answer, that Purging is more especially pleaded for, when the Incrustation is formed, and the morbid Matter concocted, at least as much as ever it will be (for a due Concoction, or Maturation, is never to be expected in the lymphatic Kind); that it is particularly contended for, when an unfavourable *Metastasis* of the morbid Matter hath already happened, and cannot well and readily be removed by other Means; that this is substituted in the Place of a suppressed critical Evacuation, and that Nature attempts, nay ultimately requires a Discharge this Way; that there is no other Method of dislodging the putrid Colluvies in the Intestins, that feeds the secondary Fever, but this; and that whenever there is a great Quantity of foul corrupt Matter in the first Passages, of what Kind soever, there is a consequent Fever: witness verminous, crampy, bilious Fevers, which cannot be carried off but by purging and vomiting; lastly, that every one allows the absolute Necessity of purging at the Close of the Small-pox; otherwise Boils, indurated Glands, foul Ulcers, carious Bones,

Bones, rotten Lungs, or a consuming Hectic, certainly succeed.

But when I recommend Purging in the secondary Fever of the Small-pox, I would always advise to begin with the most lenient cool Cathartics : The *drastic*, *scammoniate*, *aloetic Purges* are certainly highly improper till the Fever greatly abates ; then indeed some stronger Purgatives (to which I always join some *Calomel*) should be used. The imprudent Use of strong hot Purges at the Beginning, the not giving a proper Anodyne after the Purges, and the Want of duly supporting the Sick during the Operation, have, I am persuaded, been frequently attended with ill Consequences ; but am very sure, that Purging in the secondary Fever, in the Manner I have advised, is of great Service, and I have seen very many Instances of its great Success.





A
DISSERTATION
ON
PLEURISIES *and* PERIPNEUMONIES.

CHAP. I.

*Of the Power of the Winds and Seasons in
producing these Distempers.*



S Pleurifies and Peripneumonies are, and always have been, so very common, *Hippocrates* hath said much more upon them than on any other of the acute Diseases ; and his Observations are found most perfectly just, and will be ever highly worthy of a diligent Perusal by all Physicians. — One of them is, that cold north-easterly Winds bring on Disorders of the Breast, Sides and Lungs * ;

* *Aphorism. 5. Sect. iii.*

and

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and this hath been found constant and true by all his Successors. — Not but that Pleurifies, and Peripneumonies especially, are frequently observed in other Constitutions of the Air, the latter very often supervening other acute Fevers: Yet still it is certain, these two Diseases are much more frequent, when a cold dry Season, and northerly and easterly Winds have continued for any considerable Time.

The obvious Effects of dry cold Winds, on the human Body are, constringing the whole external Habit, making the Skin more dry and corrugated, shutting up its Pores and lessening Perspiration, at least suffering only the thinner Part of the Humors to fly off. By a dry Cold also the whole System of the Fibres is made more strong, firm and elastic, and the Action of the Vessels, on the contained Fluids, more vigorous and forcible; whence a brisker Circulation, more Heat, Spirit and Activity; by which the Globules of the Blood are rendered more dense, compact and numerous, and the whole Mass of Humors disposed to a greater Degree of Tenacity. — It may be added, that as cold and dry Air is almost always very heavy and elastic, by its greater Pressure on the Body, it will co-operate with its cold and dry Qualities, in producing greater Effects.— It is Fact, that, *cæteris paribus*, Blood drawn, in such prevailing Constitutions of the Atmosphere,
is

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is constantly found more dense and viscid than in long moist warm Seasons ; — and that Persons subject to asthmatic Disorders suffer most during the Continuance of north-easterly Winds.

However all these Effects may consist with high Health, and commonly do so ; and therefore *Celsus* (though reckoning up the Disorders produced by cold northerly Winds) says * *sanum tamen corpus spissat, & mobilius atque expeditius reddit.*

But alas ! such is the frail Estate of mortal Man, that the Transition from high Health to great Disease is most easy and exceeding common : For this high, rich, dense Blood, agitated by strong and vigorous Vessels, is extreamly apt to be wrought up to such a Degree of Viscidity, as makes it unfit to pass the ultimate Ramifications of the Arteries ; from which Obstructions, and consequent Inflammations, most easily arise ; especially on any Excess in Diet, or Exercise, on obstructed Perspiration, or any sudden Alteration in the Temperature of the Air, which may rarefy the Humors in general much more suddenly, than it can relax many of the particular Vessels. — Whence, by the bye, those Pains in Limbs formerly broken, in *Cicatrices* of old Wounds,

* *Lib. II. Cap. i.*

in producing Pleurifies, &c. 171

in callous Concretions on the Toes, &c. (where the minute Vessels have been rendered more straitened in their Capacities, and more rigid in their Coats) are observed to rage on sudden Changes of Weather into stormy, or wet and warm ; which nothing so soon removes as emollient Fomentations, by enlarging and softening the Vessels :— Every old Woman tells you to soak your Corns, when they pain you. — And this Method also is of very great Service in those Pains of the Side, which often remain after Pleurifies, or Pleuro-peripneumonies, for Years together, and which are owing to a preternatural Coarctation of the Vessels by the past Disease, and the Adhesion of the Lungs to the Pleura : And which many Times, on great Rarefaction of the Blood, Changes of Weather, &c. bring on the Disorder afresh, and make the Patient subject to frequent Returns of it for ever after.

It is true indeed, that Persons of a very viscid State of Blood and rigid Fibres are subject to inflammatory Disorders of all Kinds, in all Seasons ; but some Constitutions of the Air however are not only more apt to produce this inflammatory Blood than others, but also dispose more to Inflammations of particular Parts. For when very cold Air constricts the external Habit, corrugates the Skin, and shuts up the Pores, more Blood than ordinary is forced
on

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on the internal and more vital Parts, particularly on the Lungs; which, by the vast Expanse of their internal Surface (greatly exceeding that of the whole Skin *) are designed by Nature to assist the Skin, in exhaling off the superfluous acrid and vapid Humidity of the Blood; and therefore, where the Pores of the Skin are in any Degree shut up, the Exhalation from the Lungs should compensate the Defect of the cuticular Discharge.—And we in Fact find, that, immediately on taking Cold, the Lungs are more or less affected by Cough, a large Discharge of thin *Rheum*, and very often in a much severer Manner.—But when the very cold Air is likewise continually admitted into the Lungs, it also corrugates their internal Membrane, shuts up its excretory Ducts, and so hinders a due Exhalation, and Expiration, if I may so say, of the Surcharge from the retained *Perspirabile*.——It may be added, that the Air, by its great Degree of Coldness and Nearness to the Blood in the pulmonary Vesicles and Cellules, is apt to congeal, at least greatly to condense it: There have been many Instances, where extream cold Air hath caused an absolute and sudden Stagnation of the Blood in the Lungs, and killed almost instantaneously. We find often that very cold Winds so af-

* See Dr. Hales's Vegetable Statics, p. 239.

in producing Pleurifies, &c. 173

fect, and contract even the Skin of the Hands, Arms and Face, as to make it rough, cracked, and sore; why may we not suppose it hath a similar Effect on the more tender and delicate Membrane of the *Trachea, Arteria, Bronchia,* &c? In Truth the Cough, Hoarseness and Soreness, we commonly feel in breathing such a cold Atmosphere, shew that it really hath so. The *Pharynx* and *Larynx* are very often so affected by severe cold Winds, as to suffer violent Inflammations, Tumors, &c.

It is easy to conceive then, where a greater Quantity than ordinary of dense fizy Blood is thrown on the Lungs, and where the Vessels of the Lungs themselves are inordinately constricted, and the excretory Ducts and Orifices of the Glands of the Wine-pipe, Bronchia, &c. are considerably obstructed; that peripneumonic Inflammations, will be very readily generated.

But further, a very viscid Blood, the natural Consequence of a long, dry, cold Constitution of the Air, will not only dispose to Inflammations in general, and to peripneumonic Disorders in particular, but also to the pleuritic. For as the Arteries, expanded on membranous Parts, are extremely small; they are of Course liable to be obstructed by a gross fizy Blood: And hence Rheumatisms are also very common in such Seasons, the membranous Parts
of

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of the Muscles being inflamed by a viscid Lensor.—But the *Pleura* is a Membrane very largely extended, and spread over with an infinite Number of very small Arteries, the Ramifications of the Intercostals, which, arising nearly at right Angles from the *Aorta*, by that Means receive the more viscid Part of the Blood, as being the lighter (the heavier passing on nearer the *Axis* of the great Artery) and hence are exceeding subject to Obstructions from an inflammatory Lensor : And so are likewise the intercostal Muscles, and *Periosteum* of the Ribs, which receive the Blood, in Part at least, from a like Distribution of the Arteries.

Hence Pleurifies, as well as Peripneumonies, are found exceeding common, or epidemic, in very cold dry Seasons ; and in high, cold Situations, much exposed to north-easterly Winds, they are commonly endemic. Indeed pleuritic Disorders, properly so called, are apt to bring on the peripneumonic, and very frequently do so, for Reasons which will be given hereafter.—Hence it comes to pass, that we find many more Pleurifies complicated with peripneumonic Symptoms, than true and exquisite Pleurifies ; and this compound Disease the Moderns very properly call a *Pleuro peripneumony*.

As these two Diseases are so often conjoined, the Ancients, as well as many of the Moderns, have quite confounded them, ascribing the same
Symptoms

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Symptoms both to one and the other indifferently ; but there is a real Difference certainly both as to the Seat and Symptoms of these two Disorders. Indeed the Ancients, as *Cælius Aurelianus* * informs us, were greatly divided in their Opinion as to the Seat of a Pleurisy, some affirming it to be an Affection, or Passion of the Pleura, properly so called ; others of the Lungs and its Membranes : Both which Opinions have had their respective Abettors also amongst the Moderns. — I flatter myself, the following Remarks will more fully explain their Nature and Method of Cure.

C H A P. II.

Of the Peripneumony and Pleuro-peripneumony.

A Peripneumony, in the largest Sense of the Word, is a Disease so common, either as an original Malady, or consequent to some other, that its Nature should be diligently studied by every Physician ; as it is a morbid Affection of one of the principal Organs of Life, is very frequently attended with the utmost Danger, and requires very different Treatment in its different Stages. — Besides there are very different Degrees, I might say Species, of this Disease, which demand a particular Attention, and a Method of Cure peculiarly adapted to each.

* *Lib. II. Cap. xvi.*

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For a Peripneumony, arising from a violent Inflammation of the Lungs, by a very sily dense Blood obstructing very many of the pulmonary and bronchial Arteries, is a quite different Disease, and requires a very different Treatment from an Obstruction of the Lungs by a heavy, viscid, pituitous Matter ; as is the Case in what late Writers call a *Peripneumonia notha*.— And this again should be managed in a Method very different from that, which is proper in one depending on a thin, acrid Defluxion on the Lungs. And yet there are some general Symptoms common to them all, particularly a Load at the Breast, a short difficult Breathing, a Cough, and more or less of a Fever : which few obvious Symptoms however give the general Denomination of a Peripneumony, tho' in Nature very different, and to be treated very differently.— For in the *first Case* speedy, large, and repeated Bleeding is absolutely necessary to lessen the Quantity and Force of the too rapid Blood, with the most cooling, relaxing, diluting Diet and Medicines. — In the *second* some Blood indeed may be drawn off, at the very Beginning, to prevent the further Impaction of the obstructing Lentor, and make Room for proper inciding diluting Attenuants ; but if you are too busy with your Lancet, you weaken the Patient, not the Disease, which requires Attenuants, Detergents, Expectorants, gentle Pukes and proper Purges,

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Purges, with the free Use of Blisters ; which I think are quite naught in the former Case, unless towards the Close of the Disease, when they may be sometimes necessary. — The *third Case* may require Bleeding also, to hinder the Advance of the Inflammation ; but here the soft, lubricating, demulcent Method, with some proper and frequent Opiates in moderate Doses, are demanded, which in the *second Case* would be utterly deleterious.

Great Regard must be had also to the different Stages, even of the same Kind of Peripneumony, and the different Symptoms that attend it. For, tho' at the Beginning of a severe Inflammation of the Lungs, large and repeated Bleeding may be indispensably necessary ; yet if, after the second or third Bleeding, the Patient begins to spit off freely a well concocted Matter tinged with Blood, you are to restrain further Evacuation that Way ; otherwise you weaken your Patient without Necessity, and often entirely suppress the Expectoration to his utter Ruin. — And yet if a considerable Quantity of thin, florid, spumous Blood is spit off, you should draw more Blood, quiet the Cough with cool Opiates, as *Diacodium*, or the like, and give pretty freely of proper *Acids* with soft cooling *Incrassants* : Whereas if it is a thin, gleety, dark-coloured Matter that is expectorated, it is generally a Mark of greater Malignity, and

N that

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that the Blood is in a putrefying dissolving State, and will by no Means bear a large Emifion of Blood.—In short the Disease is quite another Thing, when the Inflammation is forming, from what it is when the obstructing Matter is concocted, or actually suppurated.

But to be more particular.——If a Person just before in full Health, should on violent Exercise, Debauch, or a severe Cold, be seized with a great Shivering, succeeded by burning Heat, very much Oppression and Load at Breast, with a very difficult, quick, hot Respiration, and more or less of a Cough; Blood is to be drawn immediately, in a pretty large Quantity from a large Orifice: The stronger and more plethoric the Patient, the larger the Quantity, yet so as to stop on the Appearance of Faintness, cold Sweat in the Forehead or Face, Yawning, and the like; which may in a great Measure, many Times, be prevented by bleeding the Person in a recumbent Posture.—In general fat corpulent Persons do not bear Bleeding as well as the lean and muscular, as neither having so much of the red globular Part of the Blood, nor their Vessels so elastic.—Besides the Age and Size of the Person are to be considered: It would be absurd to draw as much from a Dwarf as a Giant, tho' both strong in their Kind; the very young and very old are not the properest Subjects for it, tho' both sometimes require it.

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Sanctorius observes, that antecedent to Fevers the Body grows more heavy, and of Course more plethoric; and the *Rigors* shew a *Viscosity* in the Blood, that stagnates in the Extremities of the capillary Arteries: (it may be even seen in the Nails, Lips, &c. by their growing pale and livid) and this encreasing *Lentor* will of Course lessen Perspiration, and encrease the Quantity of Humors.—Generally the more violent the *Rigor* or *Horror* is at the Attack, the more violent is the succeeding Fever; and this may in some Measure also guide us in drawing off Blood, as we must expect, on a violent and long continued Rigor, a high Fever, and a very viscid State of Blood.

If the Symptoms are not relieved by the first Bleeding, after eight, ten, or twelve Hours more Blood should be drawn, nay even sooner if they become more aggravated; and this must be repeated, if the Fever, Oppression, Anxiety and Difficulty of breathing encrease, or continue equally severe; especially if the Blood drawn appears very firm and dense, or covered over with a tough yellowish *Coat*, or *Buff*, as it is called: which however very frequently doth not appear till the second or third Bleeding, tho' the Symptoms may indicate a very high Inflammation. — And this very often happens by the Trickling of the Blood down the Arm from a small Orifice, too strait a Ban-

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dage, or by the Sliding of the Skin over the Orifice : by any of which the Blood is hindered from spouting forth in a full Stream.

This dense buffy Appearance of the Blood, with a firm strong Pulse, will warrant the drawing off Blood, till the Respiration at least becomes more free and easy. — But if the *Crassamentum*, or *concrete Mass*, is of a very loose Texture, and not covered with a sily Coat or Buff, and the Pulse seems to sink, flutter, or grows more weak and small on Bleeding ; it is Time to desist, and try other Methods of Relief. — A thin, bluish *Film* on the Blood, with a Kind of soft greenish Jelly immediately underneath, (the *Cruor* itself being livid, loose and soft, with a turbid reddish or green Serum) is a Sign of a very *lax Crasis* of Blood, and *great Acrimony*, which will not bear large Quantities to be drawn off. — Nay even a very florid, thin, loose Blood, that gives off little or no Serum after standing some Time, however *specious* it may appear to unexperienced Persons, is far from being the *good Blood* they imagine ; but generally argues, in this Disease especially, a very considerable Advance to a putrid and very acrid State : For by mixing Spirit of Harts-horn, or Sal ammoniac with Blood from the most healthy, as it runs off, it always puts on such a florid Appearance, and gives off little or no Serum,
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how long soever kept, but still remains loose, and as it were half fluid.—It is observable that Spirit of Harts-horn used frequently, and in large Quantities, dissolves the Blood, and brings on profuse Hæmorrhages; which, I think, is an Observation that should be well considered by those, who take so frequently and freely of that Spirit.

A strong, throbbing, quick Pulse in Peripneumonies always indicates further Bleeding, at least till some Degree of Ease in breathing, or a free Expectoration of laudable Matter is obtained. — But it frequently happens that the Pulse, even at the very Beginning, seems obscure and oppressed, irregular, sluggish, and sometimes intermitting, the Patient at the same Time complaining of great Weakness and Oppression, which would seem to contraindicate Bleeding; and yet the Load at Breast, Difficulty of breathing, great Anxiety, and Heat felt about the Præcordia loudly demand it.—This often puzzles the young Practitioner. — But he should consider, that such a sudden Want of Strength, Spirits, and Pulse, doth not arise from Want of Blood, as the Duration of the Disease for a few Hours, or a Day or two, cannot be supposed to have exhausted the vital Liquid to any considerable Degree.— The Truth is, not the Defect, but the too great Quantity of Blood, in such Cases, is the real Cause of these Symptoms. —

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For the Blood-vessels being overloaded with Humors, and distended beyond the due Tone, cannot act with sufficient Vigor.—The *Æquilibrium* between the Solids and Fluids being not duly kept up, the moving Vessels are unable to protrude the Blood with a due Force; just as too great a Weight on the *Embolus of a Syringe* hinders its free Play. Hence indeed soon follows a Deficiency of Spirits, from Want of a due Circulation of the Blood, and proper Secretion of them; and thence a Tendency to Stagnation, Concretion, and a large Train of direful Symptoms, and even Death itself, unless timely prevented by sufficient Bleeding; which, by diminishing the too great Quantity of Blood, restores the *Æquilibrium* between the Solids and Fluids, and a free Action to the elastic, muscular Canals, which now again exert more Force on the contained Humors, and carry on the Circulation in a more regular and constant Manner: All which tend to attenuate the too thick and viscid Blood, and render it more fit for the Secretion of animal Spirits, which may further invigorate the Action of the Heart and Vessels. — So that in such Cases, *Letting of Blood* is so far from weakening, that it really raises the Powers of Nature; as is always evident on drawing Blood from plethoric Persons, labouring under an oppressed Pulse, as it is properly

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properly called, which is found constantly to rise on bleeding.

In some very violent Peripneumonies, where both the Lobes of the Lungs are greatly inflamed and obstructed, an immediate and excessive Weakness comes on, with an inexpressible Anxiety, and Oppression at the Breast, a very small, weak, trembling Pulse, Coldness of the Extremities, with clammy, coldish, partial Sweats, the Eyes staring, fixed and inflamed, the Face bloated and almost livid; and all this soon followed with Stupor, *Delirium*; and I have seen, in some Cases (tho' few indeed) with a *compleat Paraplegia*.

This is in Truth a very dreadful Case, but doth not arise from Want of Blood, but from Want of a due Circulation and Distribution of it: For there being so many and great Obstructions in the Branches of the pulmonic Artery, the Blood is ponded up in the Lungs, and hindered from passing freely, as it ought, from the right Ventricle of the Heart to the left; so that the Aorta and its Branches do not receive Blood enough to carry on the common Offices of Life, on which soon follows an absolute Stagnation and immediate Death.— Dissections have shewn this to be the Case, the Lungs having been found quite stuffed up with concremented Blood, red, hard, and as it were fleshy, or rather of the Colour and Consistence of

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Liver, and so heavy, that any Part of them, cut off, sunk in Water *. — If any Thing can be done in this most deplorable Case, it is by early and immediate Bleeding, or it becomes in very few Hours utterly irrecoverable. — I have seen some surprisngly good Effects from Bleeding in both Arms at once, when done in proper Season.

And yet there are some Kinds of Peripneumonies, that will by no Means bear large Bleeding, as hath been noted by Physicians of the best Authority. — And I have observed the same in several epidemic Peripneumonies, particularly in the latter Part of the Year 1745, and the Beginning of 1746 †; during which we had an epidemic Peripneumony, in which after a second Bleeding (and even sometimes after a single Bleeding) the Pulse and Strength of the Patients sunk to a surprisng Degree; and they ran into a Sort of nervous Fever with great Tremors, *Subsultus Tendinum*, profuse Sweats, or an atra-bilious Diarrhoea, with a black Tongue, *Coma*, or *Delirium*; tho' at the Beginning the Pulse seemed to be full and throbbing, and the Pain, Cough and Oppression so very urgent, as to indicate Bleeding pretty strongly. — Now in these Cases, the Blood was seldom found *buffy* to any considerable Degree, but commonly very

* *Vid. Hoffman. de Febris pneumaticis Obs. i.*

† *Vid. Obs. nostr. de Aere & Morb. epidem. Vol. II.*

florid,

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florid, but of a very loose and soft Consistence, or very dark-coloured, and coated with a very thin and bluish or greenish Film, under which was a soft greenish Jelly, and a dark livid Cruor at the Bottom.— Sometimes indeed the Coat was much thicker and more tough, but of a pale red Colour resembling the Cornelian Stone, or dilute Jelly of red Currans.— This last Appearance I have frequently noted in real Pleuro-peripneumonies.— Whenever I see such a loose, dissolved Blood, I am very cautious how I advise further Bleeding, especially if I find the Pulse, or the Patient become more languid after it, however the Oppression, Load, or even Pain, may seem to require it.— It was from Observations of this Kind that *Lancisi*, and *Baglivi* from him, caution against further Bleeding, when no *fizy Coat* appears on the Blood in the second Bleeding: *In Pleuritide, Peripneumoniâ, &c. si in sanguine è venâ sectâ extracto non appareat in superficie crusta alba, — pessimum; — si verò in altera sanguinis missione incipiat apparere, bonum: contra si in secundâ ne quidem apparebit, abstineto statim à sanguinis missione, aliter interficies ægrotantem* *. — And I concur with *Baglivi* in the first Part of the *Prognostic* as well as the last, having always found the very florid Blood, drawn in the Beginning of pulmonic Fevers of very ill Omen; for it shews, that either the *Crafsis* of the Blood is much broken and dis-

* *Cap. de Pleuritide.*

solved,

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solved, or that the gross inflammatory Blood sticks in the pulmonary Arteries, and that nothing but the very thinnest and most serous Part can transude and pass into the left Ventricle of the Heart.

I cannot but observe however, that sometimes, in Peripneumonies and Pleuro-pneumonies, the first, and even the second Blood shall not appear buffy, and yet the third shall be very sily, and this particularly if the Blood trickles down the Arm, and doth not come off in a full Stream ; but then it is ever to be observed that this Blood, tho' apparently florid, when cold, is very dense and tenacious ; whereas in the Case I mentioned above, the Blood, tho' very florid, was of a very loose and soft Contexture, and never formed into a regular firm Crassamentum. — Such a Kind of loose, dissolved, florid Blood was frequently drawn from *Sea-faring Persons* in the Beginning of the Year 1746 *, and was always attended with very ill Symptoms, very often fatal. — Such malignant Peripneumonies indeed very frequently happen to *Sailors* after long Voyages, and to Persons very *scorbutic*. — They grow first of all very short-breathed, listless, and faint on the least Motion, and have transient erratic Chills, Heats, and Pains all over their Body ; a

* *Vid. Obs. nostr. de Aere, &c. Vol. II. Mens. Jan. Febr. Martio.*

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Fever succeeds with a vast Load on the *Præcordia*, and a short, importunate, dry Cough, a very quick, small, and much softer Pulse than usual in true inflammatory Peripneumonies, clammy, unequal Sweats, and a perpetual Restlessness and Anxiety; at last they begin to spit a *thin gleety, bloody, or very dark-coloured Matter*, frequently of a very *offensive Smell*: Moreover these are not uncommonly attended with an Eruption of red, brown, livid or black *Petechiæ*. The *Urine* is commonly of a blackish dull Hue, or of a *firey lixivial Colour*, as if a small Portion of Blood was dissolved in it; this is rendered in small Quantities, and without any Manner of Sediment; but the former hath sometimes a large livid *Hypostasis*, sometimes nothing but a Matter like coarse Bran irregularly scattered up and down in it. — As these Symptoms are greatly argumentative of a broken Crasis of Blood, and high Acrimony of the Humors; large Bleeding is not likely to be successful, tho' too often imprudently used.

Though the Appearance of a pretty thick fizy Coat on the Blood is in general no ill Symptom in pulmonic Fevers; yet where it is excessively tough, and extreamly yellow, or of a pale lead Colour, it threatens Danger, and shews the inflammatory Lensor is highly wrought up, and vastly difficult to be resolved or attenuated,
and

and that it will scarce admit of any Commixture with any of the Diluents, that are taken in. — This seems apparent from the *odd Shape*, the *Craffamentum* of the Blood often puts on, of a *globular*, or rather a Kind of an *oblate sphaeroidal* Figure, after large and frequent Bleeding in violent pleuritic, or peripneumonic Fevers; for then the Cake of Blood is found to swim in a great Quantity of very thin, and sometimes a quite limpid, Serum; its greatly *contracted*, *concave* Surface, or Coat, being almost as tough as Leather, and the whole Mass nearly as hard and firm as a Piece of Flesh. — Now in this Case, as a great Deal of the globular Part of the Blood was drawn off by repeated Bleeding, the Craffamentum is much lessened in its Quantity; but still retains its greatly morbid Viscosity, and its Globules, being vastly dense, attract one the other exceeding strongly, as appears by the Figure and Consistence of the Craffamentum: and tho' the Proportion of the Serum may have been greatly augmented, by the Use of plentiful Diluents; yet it appears from the Tenuity and Limpidness thereof, that they have not been well mixed and united with the globular, and sulphureous or oily Part of the Blood. Nay it is often observed, that thin, watery Diluents are drank in large Quantities, in these severe Fevers, and rendered off by Urine almost

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most as limpid and insipid as Water *, or run off in vastly profuse Sweats ; not in the least mixing, in a due Manner, with the Blood, properly so called, nor in the least acting on the Salts and Sulphurs thereof, their exceeding firm Combination eluding the Force of the Diluters. I have repeatedly seen this in Pleuro-peripneumonies, where the Pain hath remained, almost as violent as ever, after the fourth or fifth Bleeding, and the globular Part of the Blood hath been so reduced, as that the Crassamentum hath scarce been a sixth Part of the Volume of the whole Blood, and yet as solid as a Piece of Flesh.—These Cases are generally mortal.

If after the second or third Bleeding, nay if after the first, your Patient begins to spit off freely a yellowish concocted Matter, lightly tinged with Blood, stop there, and particularly if the Breathing becomes more free, as it commonly doth ; otherwise you will weaken your Patient to no Purpose, nay to a bad one, and quite suppress the Expectoration, by which Nature is now throwing off the Disease by the most proper *Crisis*, and ready *Outlet* ; the obstructing Matter in the Extremities of the bronchial and pulmonic Arteries being so far resolved, con-

* *Hippocrates* observes that making Water, immediately after Drinking, is a dangerous Symptom in Pleurifies and Peripneumonies, *Coac. Prænot. Sect. V. Ed. Lind.*

cocted,

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cocted,

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cocted, or digested, as to pass off freely into the Cavities of the *Vesiculæ*, *Bronchia*, &c. and so up; and out of the *Trachea*, by Cough and Expectoration : whence the extream Branches of these Arteries become again passable, and the Circulation thro' the Lungs at last duly restored.

That there is a Passage from the bronchial Arteries, into the Cavities of the Trachea and its Ramifications, is evident ; for the *oily Mucus*, which in a natural State lines and lubricates the internal Membrane of the *Aspera Arteria* and its Branches, is separated from the bronchial Arteries. — And it is also certain that Water, Serum, &c. pass freely from the pulmonary Arteries into the bronchial, vesicular Cavities ; as appears from the Experiments of *Raysch*, and the accurate Doctor *Hales*.—Indeed as the bronchial and pulmonic Arteries, in their different Ramifications, join by innumerable *Anastomoses*; even by this Way the pulmonic Arteries may have a Communication with the *Bronchia*.—Now when the obstructing Matter is so duly attenuated and concocted, and the Vessels so far dilated as to give a free Passage ; it is thrown into the Cavities of the Bronchia, and so out of the Lungs by Expectoration.—It seems evident that the lateral, or serous Branches of those Arteries, at their Extremities, are so far dilatable as in some Cases to pass red Globules, and that too freely, into the Cavities of the Bronchia ; as is particularly

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particularly seen in those Spittings of Blood, which are made *per Diapedesin*, as *Galen* and the Ancients called it : For I think it is pretty certain, that some *Hæmoptoë*'s do not arise from a Rupture of the Vessels, as no Manner of Pain, Purulence, or the like, precede, succeed or accompany them.

But where these small Vessels of the Lungs are by Nature or Art made easily dilatable, they suffer less from inflammatory Lensor, than where they are very rigid and elastic ; as commonly happens in the Robust and Laborious, who according to the Observation of *Hippocrates* are most subject to, and suffer most from Inflammations of the Breast and Lungs *.— And this indeed is confirmed by every Day's Experience ; and so is likewise the following Remark of the same great Father of Physic, relating to the laudable Expectoration I mentioned above, “ Αἷμα δὲ συμμεμιγμένον μὴ πολλῷ πτύελον ξανθόν, ἐν τοῖσι περιπνευμονικοῖσιν, ἐν ἀρχῇ μὲν τῆς νόσου, πλύόμενον περιεσπικόν † καὶ κάρτα ὠφελεῖ ” : *Hippocr. Prognost.* And indeed it hath been the Observation of the very Nurses in some epidemic *Pleuropneumonies* and *Peripneumonies*, that all

* *Coac. Prænot. 29. Lib. II. Cap. xvi. De Pleuritide, Edit. Euret.*

† So I chuse to read with *Foësius* rather than περιεσπικόν, as more agreeable to the Sense and the *Hippocratic* Diction.
those

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those who spit Blood do well.—However this is very far from being always true, unless the Matter is conditioned as above: for whenever either very frothy, or sincere florid Blood is spit up, or black and partly coagulated, spongy, liver-coloured Blood, it is quite otherwise; as it shews that there is nothing like Resolution, or Digestion of the obstructing Matter performed; but that, the Obstruction being deeply radical, and the impelling Force of the Heart vehement, some Vessels are burst open, and an Extravasation of Blood made into the Cavities of the Lungs, and so spit up.—For when great Obstructions are formed in some Parts of the Lungs, the Blood must be forced in greater Quantities, and with greater Rapidity, thro' the Vessels that are pervious; which hence, being overdistended, frequently break, and the Blood gushes into the Cavities of the Bronchia, and many Times into the inmost Recesses of the vesicular Cells.—What of this Blood is spit off immediately appears florid and frothy, and does no further Damage; but the chief Misfortune is, that a great Part of it remains commonly in the Lungs, and stuffs up the Air-Bladders, and compresses and obstructs their Blood vessels; which very much encreases the Difficulty of breathing, and greatly hinders the Circulation of the Blood thro' the Lungs.—Besides as it is exceeding difficult to be pumped up from these

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these minute vesicular Cells, by continuing there it grows more and more putrid, till at length it becomes a corrosive Sanies, that destroys the very Substance of the Lungs: But of this more hereafter.

As all Inflammations of the Lungs will either quickly choak the Patients by hindering the Passage of the Blood thro' them, or terminate in Suppuration, Gangrene, or Scirrhusity, if the obstructing Matter is not soon kindly resolved, or digested; we should be as early as possible in our Endeavours to abate, and take off, the Inflammation by Bleeding in due Quantities: for when once an Abscess is actually forming, Bleeding can be of no further Service.—Nay when once the *Pblegmon* is too far advanced to be resolved, Bleeding is really disadvantageous, as retarding the next Operation of Nature to free herself from the offending obstructing Matter by a kindly Suppuration: For by this Means the Matter is made to stagnate longer, and so grows more and more acrimonious; which at length, by affecting the adjacent Parts, forms a much larger Impostume than would have happened at first, if Nature had been left to her own regular Proceedings; nay many Times it ends in a downright Gangrene, and sometimes in an obstinate Scirrhusity, making the short Remains of Life extreamly miserable.

O

Physicians

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Physicians note in general, that, after the fourth or fifth Day of a true Peripneumony, Bleeding is of little Avail to prevent the Suppuration; for most *Phlegmons* begin to suppurate in that Time, if not resolved before: This will more especially and sooner happen in such a Part as the Lungs, surrounded on all Sides by Warmth and Moisture, and so near the Heart acting on the inflammatory Obstruction with constant and great Force.—So that where the peripneumonic Symptoms continue with great Violence for four or five Days or more successively, an Abscess, or Mortification, is justly to be feared, and little Advantage is to be expected from further Bleeding.

But yet, if either the Pain returns with Violence after having ceased a considerable Time, or seizes another Part of the Breast; it is an Argument that a new Inflammation is forming, which indicates Bleeding as much as the primary, tho' not to the same Degree: for this accessory Seizure being altogether of the same Nature, and on the same *Organ* as the former, requires the same Method to prevent its Advance and further ill Consequences. The Strength of the Patient and Pulse, the Violence of the Pain, and Difficulty of Respiration, are in a great Measure to determine the Quantity: And some Regard must be had also to the Colour and Consistence of the Blood, and the Quantity and Quality of the Serum. I have sometimes ordered Bleeding the ninth or
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tenth Day from the first Attack, and found the Blood almost as fizy as what was drawn the second or third, and that too where the Lancet had not been timorously used; but the Crassamentum, tho' exceeding tough, was greatly reduced in the Proportion it bore to the Serum.

It is commonly observed, that as soon as this secondary Attack and Pain come on, with any Degree of Violence, the Expectoration, tho' before free and copious, ceases altogether, or is performed with very great Difficulty; the Violence of the Pain not suffering the *Thorax* to be duly expanded, and the Muscles of the Lungs, Breast and Abdomen to act with sufficient Force to eject the Matter: Not to mention that the Inflammation hinders a due Secretion of the lubricating *Mucus*, which should naturally be separated to smooth over the internal Membrane of the *Trachea* and *Bronchia*, and expedite the Discharge of any Matter contained in them.—And we eventually find that, after the Inflammation is abated by Bleeding, the Expectoration returns with Ease and Freedom.

So that tho' in Peripneumonies and Pleuro-peripneumonies you are chiefly to make your Evacuations by Bleeding before the fifth Day; yet on fresh Attacks of violent Pain, difficult Respiration and suppressed Expectoration, you are to begin again, as it were, anew*, but with

* *Hippocrates* bled *Anaxion* the eighth Day, because the Pains continued, and he did not expectorate. *Lib. III. Epid.*

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great Caution and Moderation: as all Relapses, in these Cases especially, are dangerous, the Sick growing daily weaker and less capable of bearing any considerable Loss of Blood. And therefore it will be very imprudent, upon every little Pain, to have Recourse to Bleeding; for more or less Pain continues, particularly after Pleuro-peripneumonies very often, a long Time after the Fever is quite gone off: *Debet prius cessare febris, & postea dolor affecti lateris*, says Baglivi*. —But Bleeding is, in a peculiar Manner, less proper where a copious Expectoration of laudable Matter goes on pretty easily, tho' it should still continue tinged with Blood, for the Reason I hinted above; *viz.* that it indicates the Resolution and Concoction of the Matter of the new Inflammation. Nay it is for that very Reason to be avoided, tho' too often imprudently ordered, and Astringents stupidly administered, to restrain this slight *Tinge* of Blood: But it is by Persons, who have very little attended to Nature's Operations, and less to *Hippocrates*, her great Interpreter.—It is without all Doubt vastly more proper to alleviate the Pain and Importunity of the Cough by gentle Opiates, cooling, soft, Demulcents, and easy Expectorants.

I have only two Things more to add on the Article of Bleeding in pulmonic Disorders.—

* *Prax. medic. Cap. de Pleuritide.*

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The first is, that Bleeding in the *Saphæna*, or Foot, is much less practised in such Cases than might be expected from the Reason of Things, and the certain Experience of its great Efficacy in spitting Blood from the Lungs; I mean after some proper Quantity of Blood may have been drawn from the Arm: *Alexander the Trallian* †, many Centuries since, advised it as very useful in that Case.—The second is, that where the Pulse and Strength of the Patient seem not to favour further Blood-letting from a large Vein, and yet the oppressive, laborious, painful Cough and Suffocation remain very urgent; Drawing off Blood by Cupping on the Shoulders, &c. may be done with Safety, and frequently gives exceeding great Relief in Disorders of the Breast, as well as of the Head, tho' the Reasons may not be so very obvious and assignable. However it must be considered, that the greater Part of the Blood, drawn this Way, is arterial Blood;—and that the Use of Blisters, Issues, Setons, and even of Cupping on those Parts is very notorious in asthmatic Coughs, Defluxions on the Lungs, &c; and seems to shew that Revulsions and Evacuations, made this Way, may be very serviceable in Inflammations of the Lungs, and in Every they are so.

† *Cap. vii. p. 94. Ex Edit. Rob. Stephan. Lutetia, 1548, Fol.*

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Although Bleeding in all Inflammations of the Lungs is indispensably necessary in some Degree, and some Times, when well timed and executed, quite curative; yet in general there are several other Indications to be answered: For both the Fever, and the particular Inflammation, require a cool diluting Regimen, and nitrous and relaxing Medicines, together with a moderately cool free Air, and as much Quiet as possible both of Body and Mind. It avails little to draw off some of the fizy, obstructing, inflammatory Blood, if the Remainder is not cooled, diluted, and thinned, and a further Generation of the inflammatory Lentor prevented by nitrous Attenuants, cool saponaceous Medicines, diluting, relaxing, emollient Drinks, Emulsions, &c. which a hot Regimen, hot Medicines, hot Air, much Motion of Body and Agitation of Mind tend greatly to encrease. Persons in asthmatic Paroxysms are under a Necessity of keeping a quiet Posture, and of breathing cool Air, or they are in immediate Danger of Suffocation; how much more so then are these necessary, where there it not only a great Obstruction in the Vessels of the Lungs, but also an Inflammation in their very Substance?—A close, narrow, stifling Room is exceedingly incommodious to any Person sick of a Fever, but much more so to those ill of a Peripneumony, as I have

have many Times observed, especially among the lower Part of Tradesmen, when two or three Families perhaps live in a House together.—*Celsus's* Advice is never more proper, nay necessary, in any Kind of Fever than in a peripneumonic, *in amplo conclavi tenendus æger* *. — If such close Rooms cannot be avoided, they certainly should be frequently, but prudently aired.

Few or no Peripneumonies, or Pleuro-peripneumonies, end well without a free and copious Expectoration; for this is the natural *Crisis* of these Disorders, as hath been noted by *Hippocrates* and all judicious Physicians, and the Want of spitting off the morbid obstructing Matter in a due Manner reckoned extremely dangerous, Αἱ ξηραὶ τῶν Πλευριτίδων ἀπλῶς χαλεπώταται †. — And again in the *Prognostic* || he says, it is a very bad Symptom when μηδὲν ἀνακαθαίρειται, — ἀλλὰ πλήρης ἐὼν ζέει ἐν τῷ φάρυγγι.—The more easy, early and large the concocted Expectoration is, so much the better. Indeed generally at the Beginning it is crude and thin, but soon becomes of a whitish yellow Colour and greater Consistence, when Matters proceed rightly; and about the third Day it is commonly streaked with Blood, or

* *Lib. III. Cap. vii.*
Edit. Duret.

† *Coac. Prænot. 3. Cap. xvi.*
|| *Scæp. xiii. Edit. Linden.*

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the Blood is so incorporated with it as to give it a bloody *Tinge*, *flavo-rubescens* as *Baglivi* * calls it, or in the *Hippocratic Phrase*, Πτύελον ὑφαίμον.—This Kind of Matter, when freely spit off, gives great Relief to the Respiration, Pain and Oppression at the Breast, and generally terminates the Disease in seven Days.

But nothing more effectually promotes Expectoration (by attenuating and resolving the impacted Matter) than drinking freely and frequently of cooling, relaxing and gently saponaceous Diluents; such as thin Whey, the *Barley Ptisan* with Liquorice, Figs, &c. the Decoction, or rather Infusion of the *pectoral Herbs*, as Ground-ivy, Maiden-hair, Colts-foot, Hyssop, &c. — These should be gently acidulated with Juice of Lemon, or Sevil-orange; — if any Thing more detergent is wanting to the above Drinks, *Honey* may be added: An admirable, natural, cordial *Sapo*, thrown almost out of the modern *Materia Medica* I know not why, nor how; for where it gripes or purges one, it agrees with a thousand, and even its griping and purging Quality may be easily corrected by boiling. — *Hippocrates* used *Oxymel* and *Mulsum* in such Cases, and advises against drinking mere Water in pulmonic Fevers, as neither good for the Cough, nor to promote Expec-

* *Cap. de Pleuritide.*

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toration * : — Any or all of these Things, by Turns, drank warm answer the above Intention exceedingly well, if taken in frequent but small Draughts, sipping them as it were perpetually; for by this Means much of the relaxing, resolving Vapor is also drawn into the Lungs, and much probably absorbed by their imbibing Vessels; so that relaxing and diluting is thus carried on in a double Manner, and of Course very effectually. Very large Draughts should not be taken at once; for they overcharge the Stomach, produce Indigestion and Flatulence, and force up the Midriff too much, which greatly embarrasses the Respiration:—Therefore *Hippocrates* advises to drink in those Diseases out of a Cup with a narrow Mouth †, probably both that the Liquor and Vapor might be preserved warm longer, and that less might be drank at a Time, and also that the Steam might be more copiously carried into the Mouth and Nose.—However still he advises to drink freely to promote the Expectoration, without which the Patient dies || :—And

* *De Vi& in Morb. acut. Sect. xxx. Edit. Linden.*

† *Μὴ ψυχρὸν, ὀλίγον δὲ ἐκ Βομβυλίας ἐκ ἐνυπόμας; for so it should be read, or simply Βομβυλίας, as all the Commentators agree, Lib. III. de Morbis, Sect. xxiv. Edit. Linden. See Galen, Erotian, and Foësius, on the Word Βομβυλίας.*

|| *Lib. I. de Morbis, Sect. xxvi. — De Locis in Homine, Sect. xxx, xxxvii. Edit. Linden, and in many other Places.*

many

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many Kinds of Drinks he advifes for this Purpose, but particularly recommends Barley-water, Honey and Water, Oxymel, and Vinegar and Water.

These relaxing emollient Drinks and Vapors are in a more especial Manner necessary, when the Expectoration is very difficult and tough, and for those of a *strigose* Habit of Body and very rigid Fibres; such as hard labouring People, and those of a hot and dry Constitution, generally are. For as a very dry Air, whether cold or hot, is found to hinder a free and copious Expectoration; a moist and warm * one cannot but promote it, by relaxing the Vessels, and attenuating also in some Degree the over viscid Humors.—*Baglivi* † greatly recommends the *fervida potio* for resolving pulmonic Obstructions, but I think a moderate Degree of Warmth is more proper both for resolving and relaxing.—Fomentations applied too hot on the external Parts are found to incrassate the Humors, and corrugate the Skin, and are vastly improper upon inflamed Parts.—The Vapors may be made more or less stimulating, or relaxing, as the Case requires.—I have known the Fumes of Vinegar itself of no small Service in malignant Peripneumonies: Several

* Aretæus says, neither cold Drink nor cold Air are good in Pleurifies.

† *De Pleuritide.*

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Kinds of Medicines may undoubtedly be administered with great Advantage by Way of Vapor: The Steam of *camphorated Vinegar* is no contemptible Thing in many Cases.

Hippocrates and the Ancients were so sensible of the Necessity of Expectoration in pulmonic Disorders, that they not only endeavoured to promote it, by the Means I have mentioned; but also in difficult Cases used much more powerful Expectorants*: The Cream of Barley with Honey or Oil, Oxymel, Hyssop, Rue, Galbanum, Mustard, Pepper, *Silphium*† were some of the milder: in desperate Cases white Hellebore, || Elaterium, ἄνθος χαλκῆ were advised: and desperate indeed they must be to be justified now-a-days; but as they had then no other, desperate Remedies were to be tried in desperate Diseases.—We have a much more ample *Materia medica*, and can avail ourselves of Things of a much gentler Nature. — But I have several Times given an Emetic in Peripneumonies with great Advantage, when the Expectoration hath been suddenly suppressed, and the Difficulty of Breathing greatly aug-

* Ἰσχυρότατα ἐπαναχρηστέα φάρμακα; *De Locis in Homine*, Sect. xxx. Edit. Linden.

† *Lib. III. de Morbis*, Sect. xviii. xxv. Edit. Linden, & alibi passim; and Aretæus advises much the same Things in Pleurifies and Peripneumonies.

|| *Lib. III. de Morbis*, Sect. xvii. Ed. Linden.

mented;

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mented; but it was when a proper Quantity of Blood had been drawn antecedently, and the Violence of the Fever abated: but in such Cases very little should be drank after it to promote the Vomiting. *Oxymel scilliticum* frequently doth great Service this Way, and its Virtues in relieving asthmatic Disorders are notorious: It not only, in a proper Dose, pukes gently, but is also an excellent cooling Attenuant, an useful *Eccoprotic*, and a very good Diuretic: It is undoubtedly greatly superior to simple Oxymel, and may be so blended with oleaginous emollient Medicines as to be highly serviceable, as an easy Expecto- rant.—Where very soft, demulcent lubricating Medicines are indicated, our common *Linētus* of *Sperma ceti*, *Ol. amygdal. dulc.* or cold drawn *Linseed-oil* with *Syrup. althææ*, *Papav. errat. diacodium*, or the like, answer the Intention.—But where Oils disagree, a Mucilage of Quince-seeds, or Linseed with *Rob* of Elder-berries, or black Currans, or their Syrup, or that of Poppies, is very useful and grateful.—*Nitre*, that very necessary cooling Attenuant, is very agreeably administered in either of these Compositions; and perhaps *Camphire*, given this Way, is the least nauseous.—The utmost Care should be taken never to give strong Expecto- rants in the Beginning of Peripneumonies, till proper Bleeding, &c. may have allayed the Impetuosity of the Blood and Fever; otherwise they will encrease the
the

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the Inflammation and Danger of Suffocation, and eventually intercept what they were designed to pump up: The Matter should be first concocted, and then expectorated. — Another Thing is also necessary to be observed in the Use of such Expectorants as *Oxymel scilliticum*, oily Medicines, gummosc Mixtures, and pectoral Decoctions; and that is, that we do not bring on any considerable Purging, which will certainly suppress the Expectoration, and endanger the Life of the Patient.

Though a free Expectoration of concocted Matter is of the highest Service in the Cure of Peripneumonies and Pleuro-peripneumonies, and should be always encouraged; yet there are some Kinds of Expectoration of very *ill Omen*.—It is particularly a very ill Sign, when much sincere florid, or frothy Blood is spit up, and thus it is pronounced by *Hippocrates* and *Aretæus*; though they both speak so favourably of the concocted Matter that is expectorated with a bloody Tinge: The former condemns the Πτύελον λίην αἱματώδες *, the latter the Δίαιμον ἀνθηρόν σφόδρα; nay *Aretæus* says, Ἐστὶ τὸ Δίαιμον τῶν ἄλλων κακίον †, and I think so too for the Reason above-mentioned; for this fresh frothy Blood proceeds from a Rupture of Arteries in the Lungs, and not from a Resolu-

* *Coac. Prænot. 17. Lib. II. Cap. xvi. de Pleuritid. &c. ex Edit. Dureti.*

† *Cap. de Pulmonaria.*

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tion of the inflammatory Obstruction. Now, if Arteries are burst in the Lungs, the Blood gushes into the Cavities of the Bronchia, sometimes in such Quantities as to cause a sudden Suffocation, if not immediately brought up: but more commonly it leaks into the pulmonary Vesiculæ, and many Times Vessels are broke in the inmost Recesses of the Lungs, Part of which may indeed be soon spit up fresh and florid, but much is very apt to remain in the ultimate Ramifications, and cellular Interstices of the Bronchia; which stuffs up the Lungs, compresses the surrounding Blood-Vessels, and at length putrefies and corrodes all around it: Hence a speedy Suffocation, a dangerous *Vomica*, or a direct Gangrene frequently ensues.—This extravasated Matter also may indeed be partly spit off in the Form of a bloody *Sanies*, or of livid and black Concretions; but it is commonly with such Difficulty, and so violent a Cough, as even to encrease the Extravasation: But it is generally so imperfectly, that much remains in the Lungs, and produces most fatal Consequences. *Hippocrates* * therefore declares such a Kind of Expectoration exceeding dangerous; and truly it is most commonly a Sign of an impending Mortification, or one actually formed.—I re-

* *Pregnostic.*—*Coac. Prænot.* 45. *Cap. de Pleuritid. ex Edit. Duret.*

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member many Years since to have observed a Matter spit up at the Close of a Peripneumony, by one Mr. Clark, a Master of a Merchantship of this Town, which exactly resembled Pieces of boiled Spleen, or rather more spongy, some of which were very foetid: He died the 19th Day of the Disease. This corresponds with a Prognostic of Baglivi * from Dodonæus: *Qui spuunt sanguinem nigrum porosum †, ad instar spongiæ, iis pars aliqua sphacelo correpta est in pulmone, & omnes pereunt.*

As soon therefore as this Expectoration of florid Blood appears, I immediately direct Bleeding in such Quantities, as are adapted to the Strength of the Patient; in order to abate the too rapid Motion of the Blood, lessen the Inflammation, and prevent as much as possible the further Effusion of Blood amongst the pulmonary Vesiculæ and Cellules, where it would do infinite Mischief. — If the *Hæmoptoë* continues, Bleeding in the *Saphæna* will be found of the utmost Service. — Besides this, cooling Emulsions, nitrous, demulcent, mucilaginous Medicines, vegetable Acids, and even mineral, if the *Hæmoptoë* be very considerable, are required: A Decoction of red Poppies, Colts-foot and Figs, acidulated with Elixir of Vitriol,

* Vid. Baglivi Opera, Lugduni 1704. 4to. p. 87.

† Αἱμαλὸς σφῆμβος μέλας. Hippocr. Lib. III. de Morbis, Sect. xix. Edit. Linden.

makes

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makes an admirable Drink in such Cases:— And we must endeavour to moderate the Violence of the Cough by *Diacodium*, a soft Linctus, or the like.—But I utterly disapprove of strong Astringents, and large Doses of Opiates, as I have often known the imprudent Use of them, in such Circumstances, bring on a vast *Orthopnæa*, and most terrible Symptoms: For the extravasated Blood must be ultimately spit off, or the Patient never recovers; but this is impossible without more or less of a Cough to pump it up. — I have several Times known very large Impostumations happen after such Kind of Peripneumonies, where the Patient had survived the Fever for several Days, nay for some Weeks.

Though a morbid *Viscosity* commonly prevails in pulmonic Fevers, yet there are not a few, in which an acrid *Tenuity* is predominant. — And as we observe in *Ophthalmies*, the *Defluxion* sometimes as thick as *Glew*, sometimes as thin as *Water*, and sharp as *Brine*, fretting the very Skin of the Cheeks as it trickles down; so the Matter expectorated in some Peripneumonies is extremely thin and crude, and the Defluxion so very acrid as to excoriate the Wind-pipe, &c. and cause an incessant and very violent Cough.

The sharp thin Humors, in catarrhal Fevers, very often bring on peripneumonic Symptoms,

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toms, by causing a constant Irritation and Agitation of the Lungs; and no small Mischief likewise arises from the violent Concussions, that are occasioned by the frequent *Sneezing*, which commonly attend such acrid *Catarrhs*, which are sometimes so *virulent* as to inflame the Nostrils, and blister the very Lips. — The great Father of Physic, in his *most admirable Prognostic*, hath pronounced it very dangerous, when *Catarrhs* and *Sneezing* precede, or supervene peripneumonic Diseases. — I once knew very severe pleuropneumonic Pains immediately brought on by a Fit of Sneezing, after they had quite ceased for a very considerable Time.

In this *catarrhal Peripneumony*, if I may so term it, no great Loss of Blood is necessary; some however should be drawn, in the Beginning, to abate the present inflammatory Disposition, and prevent future ill Accidents. Blisters also should be applied early, to avert and draw off the acrid Defluxion: And here even gentle Purgatives are proper to carry off the serous *Colluvies*. The Author of the second Book *de Morbis*, amongst the *Hippocratic Writings* *, advises to purge in an *Erysipelas* of the Lungs, where the Expectoration is large and thin: And I have frequently experienced the good Effect of Purgatives in these catarrhal

* Sect. liii. Edit. Linden.

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Peripneumonies, though they are utterly improper in those that are attended with a laudable concocted Expectoration. Much less Drink is necessary in this Peripneumony than in the dry Kind; some *demulcent pectoral Ptisan* however is proper to temperate the Acrimony of the Humors, and should be taken warm with some mild Diaphoretics, to promote easy breathing Sweats: *Coffee* in this Case is both a pleasant and a profitable Drink. Some gentle Opiates likewise are required to moderate the Cough, such as *Diacodium*, or *Elixir asthmaticum*, not in large Doses, but frequently repeated; with which may be joined *Spermacei*, *Myrrh*, *Olibanum* and *Camphire*, as they will also tend to incrassate the thin catarrhal Humor, and abate its Irritation; which, as *Hippocrates* says, brings on Peripneumonies, &c. which cease as soon as the Defluxion becomes more thick and concocted*.

But of much worse Omen, than this thin crude Expectoration, is the *livid*, *gleety*, and *sanious*, frequently resembling the *Leys of red Wine*, sometimes more *black*, and sometimes very *fetid*; for this either proceeds from a gangrenous State of the Lungs, or from a Destruction of the Crasis of the Blood by very great Acrimony, which is often the Case in the highly

* *De veteri Medicina, Sect. xxxiii. Edit. Linden.*

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ſcorbutic: A vaſt many Inſtances of which we have lately had amongſt the *Sailors*, after long Cruifes and *West-India Expeditions*.—The Blood drawn from ſuch Peripneumonics appeared in a diſſolving putreſcent State; the *Craſſamentum* looſe and tender, the *Serum* turbid and reddiſh: The black Tongue, and Teeth furred with a dark thick *Sordes*, the offenſive Breath, and high-coloured, or blackiſh rank Urine, which were generally obſerved, denoted a great Corruption of the Humors; and the black Spots, or bloody Dyſentery, which frequently appeared the fifth, fixth, or ſeventh Day, more ſtrongly evinced it.—It was ſurpriſing how much the Pulse and Strength of the Patient ſunk after Bleeding in ſuch Caſes: With no ſmall Concern and Aſtoniſhment I ſeveral Times obſerved a vaſt Anxiety, Fainting, cold Sweat, and a thready intermitting Pulse, very ſoon ſucceed it; though at the very Begining of the Fever, and when the Pulse ſeemed ſtrong and throbbing before. — I have ſeen this even in Pleuro-peripneumonies, where the Pain of the Side was violent, the Load at Breſt great, and the Cough conſiderable; otherwiſe the peripneumonic Appearance might have been imagined to be a mere Symptom of a malignant Fever.—I am very ſure this putrid Peripneumony never bore a ſecond Bleeding with Advantage, ſeldom indeed the firſt, un-

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less there was some considerable Degree of *Firmness* and *Tension* in the Pulse*. — When I was diffident as to Bleeding, I ordered Scarification and Cupping sometimes with Success; though in one or two Cases, the Effusion from the Scarification was vastly profuse, and could not be totally restrained, till the Patient expired.

Here then some *anti putrescent* pectoral Medicines are necessary; a Decoction of Figs, Colts-foot and red Poppies, well acidulated with Juice of Sevil-orange, or Lemon first, and then with *Gas Sulphuris*, or *Elixir Vitrioli*, is very proper. — Nitre, *Olibanum*, Myrrh, Flowers of Sulphur and Bole may be administered with *Conserv. Lujulæ*, Rob of Elder or Currans, Mucilage of Quince-seeds, and *Syrup. de Rubo Idæo*: *Camphorated Vinegar* with Syrup of Elder and Raspberries is an excellent Medicine; a Spoonful or two of these latter should be given ever and anon. Sound Cyder, and Wine and Water with Sevil-orange or Lemon Juice, drank warm, promote Expectoration when deficient, and correct the *alcalescent Acrimony*. — Tincture of Roses with red Poppy Flowers moderated an inordinate Defluxion of the thin bloody *Ichor*; frequently however *Oxymel scillit. & Aq. Cinnamom. fort.*

* *Vid. Obs. nostr. de Aere, &c. Vol. II. Jan. Febr. 1746.*

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were necessary to pump up the Matter, when a great Rattling in the Wind-pipe, and Difficulty of Breathing, indicated a vast Quantity of it in the Lungs: And yet very often the Importunity and Violence of the Cough was to be appeased by *Elixir Asthmaticum*, *Diacodium*, &c.—— Sago, Panado, Jelly of Harts-horn, roasted Apple, Cream of Barley, or thick Gruel with a little Wine and Juice of Lemon, given little at a Time, but often, were necessary to support the Patient; even Strawberries, Rasberries, Currans, Cherries, were sometimes indulged with Advantage. Nor is this a new Practice; for *Aretæus** advises the Fruits of the Season, such as Figs, &c. in the Cure of Pleurifies; and the same Author very justly says, that Food may be so adapted, as to be made Physic†. — I have been more large in the dietetic Part; for in a Word a proper Support of the Patients, and gaining Time till the Acrimony of the Humors was corrected, and the Lungs disburthened from the putrid Colluvies, seemed to be the great Affair: at the Close, at least, the whole depended on a well-regulated Diet, in which Toast with diluted red Port-wine, mulled up with Sevil-orange Rind, Mace, or Cinnamon, and well acidula-

* *De curatione Pleuritidis.*

† 'Εν Τροφῇ γὰρ κρίνεται τὰ φάρμακα, ἀτὰρ καὶ τὰ φάρμακα ἐν Τροφῇ. *Ibid.*

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ted, were remarkably useful.— I seldom found Blisters of any Service in this Case, often indeed mischievous, fretting much, and venting a vast deal of thin bloody Matter, and sometimes attended with Mortifications.

A very thin yellow Spitting, as if tinged with Saffron, is another ill Symptom in pneumonic Fevers; as either denoting that the inflammatory Lentor sticks fast in the Arteries of the Lungs, and that nothing, but the ferous and thinnest Part of the Blood, is strained through them; or else it shews that the whole Mass of Blood begins to dissolve, and its bilious Principles to be highly exalted, and that all tends to a general Putrefaction.— In very putrid Fevers even the Milk, Sweat, &c. turn yellow, and stagnant Blood putrefying and dissolving always puts on that Appearance.—*Hippocrates* indeed commends that Expectoration, in which the *yellow* is strongly mixed with the *Spittle* * (or an intimate Mixture of yellow with white); but then he declares the *sincere yellow Spit* (ξανθὸν ἀκρίτον†) dangerous; and it is constantly found so, and is commonly attended with a violent Cough, and brought up with exceeding great Difficulty: Besides, it is many Times succeeded by a *Hæmoptoe* from a

* Τὸ ξανθὸν συμπαρυγμένον ἰσχυρῶς τῷ πτύελῳ. *Prognostic. Sect. xiii. Edit. Linden.*

† *Ibid.*

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Rupture of the Vessels; and this particularly when the Tongue appears very red, dry, smooth and shining, with a Kind of *livid Bladders* * *at the Top*; which, by the Way, is a bad Symptom in all Kinds of Fevers.—— It is carefully to be distinguished in Practice, from which of the above Causes this thin bilious Expectoration proceeds; in order to which we should diligently consider the Pulse, State of the Blood, and Temper of the Body: for very different Indications will arise from the different Causes.

I shall conclude these Remarks, on the Expectoration in pulmonic Fevers, with the following Observations of the great *Hippocrates*. —“ Matter should be spit off easily and early
“ in Peripneumonies and Pleurifies; the Colour of it should be a yellow well mixed
“ with the Spittle, or a concocted yellow Matter that is tinged with some, but not too
“ much, Blood:— If this happens in the Beginning of the Disease, it is very advantageous; but
“ is not so much to be depended upon after the seventh Day.—It is exceeding bad when
“ there seems a great Quantity, and Rattling, of Matter in the Throat, and yet nothing is
“ spit off. It is indeed, in all Cases, dange-

* Πομφόλυξ ὑπογλῶττι on the Tongue Hippocrates pronounces dangerous, and that it precedes Spitting of Blood. Coac. Prænot. 6. Cap. de Pleuritide.

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“ rous when nothing is expectorated ; but that
 “ which is very viscid, small, and globular, or
 “ frothy, is unprofitable. The sincere yellow
 “ unmixed Spitting is bad ; when very bloody,
 “ or livid, it is dangerous ; especially when
 “ this Appearance is very early ; but that which
 “ is quite black is worst of all : It is an ill
 “ Sign also when it is very green (ἰώδες).
 “ Whatever is spit up with great Difficulty,
 “ violent Cough, and no Relief to the Pain
 “ and Oppression, shews the Case to be bad.”

See *Coac. Prænotion.* 13, 14, 15, 16, 17, 18.
Edit. Dureti, Cap. de Pleuritide, compared with
 the *Prognostic of Hippocrates* ; who says, a
 concocted Expectoration is like good Pus *,
 not thin and gleety, nor very yellow, very
 bloody, green, or livid : Indeed in any Ab-
 scess, or Ulcer, such Colours are of very ill
 Omen, as denoting a high Degree of Acri-
 mony.

But when a Resolution, or Concoction, of
 the inflammatory Obstructions of the Lungs
 happens, not only Part is thrown into the Ca-
 vities of the *Bronchia*, and so spit off ; but also
 Part of it passes on into the corresponding
 Veins, and thence moves on with the rest of
 the Blood, in the common Road of Circula-

* Πύονα δὲ ἐστὶ τὰ μὲν Πύρεα, ὁξέταν γίνεσθαι ὅμοια τῷ Πύω.
De Febr. acut. Sect. liii. Edit. Lindeni.

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tion; till at length it is partly carried off by thick turbid Urine, in large Quantities, depositing much reddish, yellow-coloured Sediment, which in peripneumonic Disorders always betokens Good, and partly also sometimes by bilious Stools.—*Hippocrates* observes, that this thick subsiding reddish Urine in Pleurifies is a secure Sign *, and that it carries off Peripneumonies when thick and plentiful †.—He describes these concocted Urines as having ὑποστάσις ὑπερύθρης ὀκροῦν ὀροβῶ ||, that is, a Kind of a pale lateritious Sediment, as we call it.—But he justly observes, it is an exceeding ill Symptom, if, from being before thick, they grow thin about the fourth Day ‡;—and so it is indeed at any Time of the Disease, whilst the Fever continues very considerable.

Nothing promotes these Urines and Stools more effectually than emollient laxative Clysters, as they are a Kind of Fetus, and gentle Stimulant, to all the Parts of the lower Belly, and not only tend to discharge Urine and Stool, but Wind also, which sometimes, by huffing up the Abdomen and Midriff, greatly straiten the Respiration.—Besides when gross Excrements press on the Bottom of the *Aorta*,

* 586 *Coac. Prænot. Edit. Foëssi.*

Sec. liii. Ed. Linden.

|| *Ibid.*

† *De Vict. acut.*

‡ *Coac. Prænot.*

53. *Cap. de Pleuritid.*—20. *Cap. de Urinis, Edit. Duret.*

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and Heads of the *Iliacs*; too much Blood re-gurgitates to the superior Parts, particularly the Breast, which encreases the Inflammation, Oppression, &c.—*Hippocrates* therefore advises * cooling Clysters in peripneumonic Fevers, especially the first three Days †; and *Aretæus* says, we should inject an acrid Clyster, in some Cases, when we cannot well bleed ‖.—The greatest Care however should be taken not to throw the Patient into a profuse Diarrhœa, which will suppress the Expectoration without relieving the Disease; and accordingly the great Oracle of Physic ‡ says, it is a bad Symptom where it happens to Pleuritics and Peripneumonics; because when there is a great Flux of Humors downwards, the superior Parts grow dry, the Spitting ceases, and the Sick die **: So that the Body should not be too costive, which would encrease the Fever; nor too loose ††, lest the Spitting and Strength of the Patient fail. — This is *Hippocratic* Physic, and I am sure as rational, and well founded, as any of the modern.—But to proceed.

Sometimes the morbid Matter is critically translated to the lower Parts, producing Phleg-

* *De Affect. Sect. viii. Edit. Linden.*

† *De Vict.*

acut. Sect. lii. Edit. Linden.

‖ *De curatione Pulmonar.*

‡ *Hippocrat. Aphorism. 16. Sect. iii.*

** *Lib. III. de*

Morb. Sect. xvii. Edit. Linden.

†† *Ibid.*

mons,

and Pleuro-peripneumony: 219

mons, Impostumes, erysipelatoſe or œdematous Swellings, Ulcers, &c; particularly in Perſons formerly ſubject to ſwolln or ſore Legs, which are frequently noted to ſwell, or break up again, at the Cloſe of peripneumonic Diſorders, to the great Relief of the Breſt. It is a well known Thing, that on drying up Ulcers in the Legs ſuddenly, the Lungs become forthwith affected; and that hydropic Tumors of theſe Parts, forced up by laced Stockings, Bandage, &c. immediately bring on aſthmatic Diſorders: Which ſufficiently ſhew the natural Conſent there is between the Breſt and lower Parts, and that they are reciprocally affected by Diſorders.—Wherefore it ſeems rational, in ſevere pulmonic Diſorders, to attempt a Derivation of the Humors to the Legs by tepid Bathing, Bliſters, &c: And in Fact this hath been often practiſed with Succeſs.—How often do we find a *Metaſtaſis* of the Gout to the Lungs ſuddenly relieved by a *Revulſion* of it to the Feet by acrid Cataplaſms? Where there is great Danger, we ſhould neglect nothing.—When Bliſters, applied to the Legs in pulmonic Diſeaſes, ulcerate ſeverely, they commonly give great Relief; but they are often exceeding difficult to be healed up.—This was particularly remarkable in the Year 1740—41—46—47 *.—I then alſo obſerved, that if the

* *Vid. Obſ. noſtr. de Aere & Morb. epidem. Vol. II.*

Discharge,

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Discharge, from the ulcerated Blisters, was suddenly suppressed; not only the Cough and Difficulty of Breathing returned, but sometimes a very great Purging, and sometimes very profuse Sweats forthwith came on: So that, in not a few Cases, the Patient was either worn out by the Pain and vast Discharge from the Blisters, or run down by a colliquative Diarrhœa, or Sweat; terrible *Aphthæ* frequently closing the fatal Scene.—Probably this arose from the great Acrimony of the Lymph and Serum, which having been jellied as it were by the preceding Fever, and now dissolving, was turned into a Kind of putrid *Ichor* (for when *Serum* is coagulated by Heat, its next State is a putrid *Liquamen*, or Dissolution): Nor did it only issue in profuse Stools and Sweats, but vented itself likewise by other Ways, as very foul, sharp, turbid Urine, pustular Eruptions, angry Boils, watery Bladders, very painful and fretting, on several Parts of the Body; as the Shoulders, Arms, Back, Breast, &c.—From some Observations of this Kind, it is likely, the Ancients (who always carefully studied to follow and second Nature's Endeavours) applied *acrid Epithems*, as Salt, Mustard, &c. to the Breast, Back and Shoulders, in pulmonary Distempers. It is certain there is a great Consent between the Skin and the Lungs, as is evident in a repelled Itch, Small-pox, Measles,

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Measles, &c. which immediately fall on the Breast.—Therefore blistering the above Parts, after a proper Quantity of Blood is drawn off, should seem a rational Practice, especially towards the Decline of peripneumonic Fevers.

Though Nature takes sometimes these different Methods of relieving herself in peripneumonic Diseases, yet her proper and common Effort is by Expectoration; and while that proceeds well, we may indeed favour her Attempt, but never interrupt it, which violent Purgings, Sweating, and the like, will infallibly do:— So that those other, just now mentioned, seem only the By-ways of Nature, and the morbid Matter is then only to be strongly solicited through them, when the high Road is either stopped, or greatly embarrassed.

C H A P. III.

Of the Peripneumonia notha.

WHAT I have said above relates to the Nature and Management of inflammatory, or true Peripneumonies; but there is a Disease, noted chiefly by Sydenham, and the later Authors, under the Name of a *Peripneumonia notha*, in which, though the Load at Breast is very great, the Breathing very difficult, and the Cough very importunate, and sometimes

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sometimes violent, (all sufficiently denoting the Lungs to be considerably affected); yet the Fever and Heat are small, many Times scarce perceptible, the Pulse either quick, weak and small, or sluggish and oppressed, never hard and tense.—So that as this Distemper hath very different, and almost quite contrary Symptoms to those of a true Peripneumony in several Respects; it is reasonable to suppose it arises from very different Causes, and requires a very different Method of Cure.—And in Fact we see, that bastard Peripneumonies commonly seize the old and phlegmatic, the weak and lax, the fat and unwieldy, and are most rife in wet, slabby, foggy Weather and Winter Seasons; whereas the true inflammatory Peripneumony generally attacks the robust, vigorous and active, and is most frequent in cold, dry Weather, during north-east Winds, and high Stations of the Barometer. These two Diseases then seem to differ almost as much as ardent and slow nervous Fevers; or as much as an inflammatory Quinsy doth from one that is purely humoral, or arising merely from a serous Defluxion.—And such a serous acrid *Colluvies* may fall on the Lungs, be diffused into and amongst the inmost Recesses of their vesicular and cellular Cavities, and occasion a great Oppression on, and some Degree of Obstruction in, the pulmonic and bronchial Arteries,

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ries, and so greatly hinder a regular Circulation of the Blood through the Lungs. The frequent Chills and Flushes of Heat however, the Quickness and Irregularity of the Pulse, Anxiety and Weight at Breast, Pain and Giddiness of the Head, Foulness of the Tongue, &c. sufficiently indicate a feverish Habit.

Upon the whole, this Disease seems to have its Origin from a *pituitous Lentor* of the Blood, and a *ropy* Disposition of the *Lymph* and *Serum*; which being greatly redundant from suppressed Perspiration, &c. and put in Motion by a febrile Heat, or sudden Agitation of the Humors, is thrown on the Lungs faster than it can pass off (for viscid Humors never pass as freely through the Extremities of the Arteries as when more thin and fluxile); whence, being there more and more congested, it more and more obstructs the pulmonic Vessels, till at last a fatal Stagnation ensues, and Death the Consequence.—We see this exemplified in a particular Manner, by bringing on an artificial Peripneumony, if I may so call it; *viz.* Let a Girl labouring under a *leucophlegmatic Chlorosis* (where such a heavy viscous *Pituita*, as I have mentioned, predominates) be forced into great and long continued Exercise; her Lungs at length become so stuffed and loaded, that she falls into a vast Difficulty of Breathing, and even an entire Suffocation.—This hath really happened

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happened in several Instances, where the Exercise hath been pushed too far.— I might have taken Notice also, that such a pituitous Lensor of the Blood and Humors doth not give off a sufficient Quantity of animal Spirits, to actuate the Vessels with Force enough to carry on a due Circulation.

As there are many intermediate States, between the violent inflammatory Peripneumony; and this last mentioned, no distinct settled Method of Cure can be laid down; because the peripneumonic Malady, to be immediately treated, may sometimes incline much more to the inflammatory State, and sometimes much less.

For a Disease is a Disorder in the animal Œconomy, distinguished indeed by such and such particular Symptoms, and called by such or such a Name; but each particular Disease, in every individual Patient, is to be considered by the attending Physician, not according to the *Nomenclature*, but according to the Nature, Causes and Symptoms of the particular Disease in that particular Person; and Measures should be taken accordingly.—Thus if I meet with a great Load and Uneasiness at Breast, a difficult hot Breathing, Cough, &c. with a full, strong, quick Pulse, or a very tense and hard one, in a strong and vigorous Person; I have a sufficient Warranty to be much more free and frequent

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quent in Bleeding, than where the Oppression, Cough, &c. are not attended with such a rapid and strong, or quick and tense Pulse; especially if I previously knew the labouring Person to be of a weak, lax, or phlegmatic Constitution.

So that when the Pulse is weak and low, the Heat little, or not considerably above the natural, the Urine pale and crude, and so on; I must proceed with great Caution in bleeding a pulmonic Patient, though the Load and Oppression at Breast may be very urgent. — And in Event when Blood is drawn from a Person under a bastard Peripneumony, it either appears loose, thin and florid, or more commonly of a darkish livid Hue, and not coated over with a thick viscid *Buff*, as in common Inflammations of the Lungs. — And it is observable that the Patient soon sinks, and grows considerably weaker after such an Evacuation, though, for the present, seemingly relieved, as to the Anxiety and Load on the *Præcordia*: For as Bleeding, in this Case especially, weakens the Powers of Nature, and the Action of the Solids on the Fluids: the morbidic Lensor, the continent Cause of the Disease, is thereby encreased. — Of this *Sydenham* himself was so sensible, that he particularly cautions against repeated Bleedings in a *Peripneumonia notha*, especially in Persons of a gross Habit of Body,

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and

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and that had passed the Flower of their Age*; though in a true Peripneumony, he imagined he could as effectually *vent* the Matter of the Disease through the *Orifice of a Vein*, as by the *Trachea itself* †.— It is moreover certain, that common *catarrhal Fevers*, in which a serous *Colluvies* abounds, will not bear very large Bleeding, much less a *Peripneumonia notha*, where a slimy *Pituita* is redundant.

But as Bleeding, on the one Hand, is to be used with great Caution in this Disorder, so on the other are very heating and stimulating Medicines, especially at the Beginning of the Disorder; otherwise not only the Oppression on the Breast is greatly oppressed, but a comatose Disposition also is readily brought on. For the morbid Lensor may be forced in too great Quantities on the Vessels of the Brain, and accumulated there, as well as in the Lungs; and evidently is so from the Giddiness, Pain and Heaviness of the Head, which commonly attend the bastard Peripneumony: For as the free Descent of the Humors from the Head is considerably hindered by the too great Repletion of, and almost Stagnation in, the Lungs; the right Ventricle of the Heart hath not sufficient Room to play off its Contents of Blood, and receive others freely.

* *Cap. de Peripneumonia notha.*

† *Cap. de Pleuritide.*

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We should proceed therefore with great Circumspection in treating this Kind of Diseases, which are always dangerous, and frequently fatal; and the more so, as, at the Beginning, the Mildness of the Symptoms is too apt to mislead both the Patient, and less cautious, or unexperienced Physician, into too great a Neglect, or wrong Management. I have seen it more than once, or twice, taken for a mere Fit of *Hypochondriacism*, where a very few Hours have shewn the fatal Mistake. — But where a perpetual laborious Wheezing, great Anxiety and constant Oppression on the *Præcordia*, comatose Symptoms, cold Extremities, and dark lead-coloured Nails and Visage are come on; the Physician must be more stupid than the Patient, not to see the immediate Danger.

I think in general more or less Blood should be drawn in the Beginning; but, as *Sydenham* well observes *, during the Operation let the Patient be kept in a recumbent Posture, by which means Faintness, otherwise very apt to come on, will be avoided. — For this not only lessens the too great Load and Distension of the Vessels, but also makes Room for such Drinks and Medicines as may be necessary in the Process of the Cure: But as to the Repetition of Bleeding we should be very cautious, and well consider the State of the Blood, the

* *De Peripneumonia notha.*

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Strength of the Pulse and Patient, before we advise it. It is undoubtedly sometimes necessary.—We are frequently obliged to bleed repeatedly in asthmatic Paroxysms, where there is no Manner of Fever.—Mild, attenuant, saponaceous Medicines, thin diluting detergent Drinks, and the Application of Blisters should succeed Bleeding: An Infusion of inciding, detergent, pectoral Herbs, as Ground-ivy, Hyssop, Penny-royal, Liquorice, or a thin Mustard-whey sweetened with Honey, and sharpened with Lemon, are proper for common Drink. —Some Dilution is necessary in this Disease, though nothing so much as in a true Peripneumony, nor indeed doth Nature call for it by any great Thirst; yet as the Lensor, predominant in this Disorder, is most readily dissolved by warm watery Liquors, some are undoubtedly proper.

As a bastard Peripneumony is commonly attended with frequent Urgings to vomit, I think it pretty clearly hints to us the Expediency of relieving Nature that Way; and accordingly I have often experienced the good Effects of gentle Vomits in it, after some Blood had been drawn off. — A Spoonful or two of *Oxymel scilliticum*, or *Vinum Ipecacoanhæ*, with a few Draughts of Mustard-whey, or the like, are sufficient: A large Quantity of any Kind of Liquor should not be drank.— This not only
pumps

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pumps up much heavy *Pituita* from the Stomach and Lungs, but also, by the Concussion it gives to the whole vascular System, promotes a general Attenuation and Fluxility of the Humors; and a Stool, or Sweat commonly succeeds.

The mighty Cures, in Pleurifies, &c. boasted of by *Rulandus* *, and others with the *antimonial Aqua benedicta*, were greatly owing to its emetic Quality; and the famous *Poudre des Chartreux* †, or *Kermes mineral*, gained such high Repute in Pleurifies, Peripneumonies and Defluxions on the Breast, in a great Measure at least, from the gentle Efforts it creates to vomit.—Undoubtedly it hath had good Effects in catarrhal Fevers, and pituitous Peripneumonies; but to give either the one or the other in inflammatory Peripneumonies, or Pleurifies, without previous Bleeding, is utterly wrong, dangerous and empirical.

Let me here take Notice of what I many Years ago mentioned, that the best of all the antimonial Preparations, I have ever tried, (and I have tried many) is in my Opinion the *common Vinum benedictum*, or Infusion of Glass of Antimony in Wine ‖.—It is surprising we should seek for any other, as this possesses the whole

* *Mart. Rulandi Curat. empiric. passim.*

† See *Memoires de l'Academie royale des Sciences*, ann. 1729.

‖ *Vid. Obs. nostr. de Aere, &c. Vol. I. p. 140.* there called *Essentia Antimonii*.

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Virtues of Antimony. You may make it a rough Emetic in a large Dose, you may give it in a few Drops, so as merely to excite Perspiration:—With it you may puke, you may purge, you may sweat;—from ten to fifty, or sixty Drops it is an Attenuant, Alterative, Diaphoretic and Diuretic; a few more gently purge; and every one knows a large Dose strongly vomits: What will any other Preparation of Antimony do more? Here it is in *solutis Principiis*, as the Chemists speak, in mere *Effluvia* as it were, in the most highly attenuated Manner, and most intimately and adequately mixed with the *Menstruum*; capable of passing and affecting the most intricate *Mæanders* of the very minutest Vessels, and yet powerful enough to stimulate the great alimentary Canal. — The common solid Preparations of Antimony are either a mere *inert Calx*, or very uncertain in their Operations, sometimes very rough, sometimes lying a long Time in the Stomach and Bowels, and exciting very untoward Symptoms; whereas this quickly acts, and as quickly passes off.—It certainly is an admirable Attenuant and Deobstruent, without heating a tenth Part so much as volatile alkalious Salts, and in most Cases much more safe and efficacious, particularly in the Disease now treated of.—In a Word it much more deserves the Name of a *Catholicon* than any of the
boasted

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boasted *Nostrums*, that are quacked upon the World by the great *W——d*, or the meanest Itinerant.—In good Hands it will certainly do great Things.—The timid, low, insipid Practice of some is almost as dangerous, as the bold unwarranted Empiricism of others: Time and Opportunity, never to be regained, are often lost by the former; whilst the latter, by a *bold Push*, sends you off the Stage in a Moment.

Blisters should never be neglected in a *Peripneumonia notha*, as not only serviceable from their attenuating and stimulating Quality, but also as they drain off Part of the morbid Coluvies: A large one to the Neck should always be set on at the Beginning, and Epispastics to the Legs and Thighs are often found to relieve the Head and Breast, when other Methods fail.—But as it frequently happens, in this Disorder, that the Limbs grow torpid and coldish, a very bad Symptom! they should be well rubbed before the Blisters are laid on, and then well wrapped up in Flannel (which by the Way is frequently also necessary in low nervous Fevers); for this very much promotes the Rising of the Blisters, and the consequent Discharge.

When comatose Symptoms and a very difficult Respiration remain after Bleeding, you may draw off more Blood by cupping and scarifying the Neck and Shoulders, when you cannot venture to open a Vein again; and this

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hath frequently a surprizing good Effect : In a very threatening Case you should blister the Scarifications.

Frequent Stools are certainly useful in this Disorder. *Sydenham* advises Purging every other Day * after bleeding once and again, but I think this is over-doing it in both Respects : For though Bleeding and Purging too, may be necessary at the Begining ; yet it is very seldom proper to repeat the former, and the latter must be managed with some Caution, especially when repeated. For the Patient is apt to fall into Faintness, cold Sweats, &c. unless properly supported during the Operation ; which indeed may be easily done ; but surely in most such Cases it requires more than Small-beer, and Water-gruel, to do it.—
There is one Thing to be observed, as to both these Evacuations, and that is, that if the Sick spit largely a concocted Matter, which is sometimes the Case even in this Peripneumony, neither one nor the other is proper ; and laxative Clysters or mild *Eccoprotics* only should be given, at least during the copious Expectoration ; and thin Mustard-whey, *Hydromel*, or pectoral Decoction, with a small Quantity of soft white Wine in them, should be given frequently to promote it.—*Hippocrates*, in several

* *Cap. de Peripneum. notha.*

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Places, advises *Hydromel*, and sweet and watery Wine * in Pleurifies and Peripneumonies, to promote Spitting. Diuretics in this Case, if we are happy enough to succeed with them, are of very great Service, especially provided we can promote a *foul hypostatical Urine*: But the Truth is, in this Disorder, very little is to be depended on Urine, either as to *Crisis*, or *Prognostic*; only a thin, pale, or limpid Urine is universally bad in pulmonic Disorders.

Nitre, *Sperma ceti*, Cinnabar, Saffron, *Pulv. contrayerv.* Camphire, *Sp. vol. oleos.* *Lac ammoniac.* and *Oxymel scilliticum*, Decoctions of Figs, Liquorice and Elecampane, are the most adapted Parts of the *Materia medica* in this Distemper: The *saline Draughts*, made with *Salt or Spirit of Harts-horn* and *Juice of Lemon*, or *distilled Vinegar*, are exceeding useful; as they promote Expectoration greatly, relieve the Difficulty of Breathing, and commonly operate by Sweat, or Urine.—But Opiates and oily mucilaginous Medicines are hurtful, and so are the highly stimulant and volatile if given too early, though they sometimes have a good Effect towards the End.—But the different Degrees of Heat, Fever, and Difficulty of breathing, the State of the Pulse, Blood, and other concomitant Symptoms, can only deter-

* Οἶνος γλυκὺς καὶ ὕδατος, *Lib. III. de Morb. Sect. xxiv.*
Ed. Lind.

mine in what Manner, and to what Degree, very attenuating and warm Medicines, or those of a cooler Kind, may be made Use of.

C H A P. IV.

Of Pleurifies.

A Violent Pain on either Side of the Breast, attended with an acute Fever, is commonly called a *Pleurisy*; and this whether it arises from an Inflammation of the *intercostal Muscles*, the *Periosteum* of the Ribs, or the *Pleura* itself; which last indeed, in Strictness of speaking, is only the true Pleurisy, the former being Species of an inflammatory Rheumatism, and are called *bastard*, or *spurious Pleurifies*.—However as they greatly affect the Respiration, when violent, they are always attended with much more ill Consequence than rheumatic Pains in other Parts of the Body, and demand a particular Regard, and a speedy Removal.

For as the Violence of the Pain hinders a due Expansion of the *Thorax*, the Respiration is immediately affected; hence, the Lungs not being sufficiently inflated, the Blood cannot pass freely from the pulmonic Arteries to the pulmonic Veins, and so into the left Ventricle of the Heart: Whence a Congestion, and some Degree

gree of Stagnation of the Blood in the Lungs will arise.—Now as the right Ventricle of the Heart is continually throwing more Blood into the pulmonic Artery, its Branches become more and more distended, till at length they are rendered so very turgid, as to press on and obstruct the Branches also of the bronchial Arteries; and thus an Inflammation of the Lungs, or a compleat Peripneumony, is often the Consequence of a true, or bastard Pleurisy, especially when the Blood is very viscid.—Indeed whatever interrupts a free Inspiration and Expiration is apt to produce this.—Thus oftentimes a Quinsy brings on a Peripneumony, the free Passage of the Air, through the *Glottis* into the Lungs, being obstructed.—*Frederic Hoffman* * takes Notice that even flatulent and spasmodic Colics, continuing any Time, are often succeeded by Pleurifies and Peripneumonies; the Pains, Spasms and Flatulence impeding the free Action of the Diaphragm;—and partly also, as he says, by hindering a due Passage of the Blood through the *Viscera of the Abdomen*, by which too much is thrown on the Lungs, Pleura, &c.—Very strait Lacing, and Straining for a fine Shape, hath made many a fine Girl spit Blood, and ruined the Lungs, by preventing a full and easy Inspiration.—A fractured Rib, or even a simple Contusion of the

* *Consult. Medicinal. Tom. I. Francof. 1734. 4to, p. 450.*

Breast,

Breast, very often brings on a *Hæmoptoë*, Cough, &c.—In Truth when any of the Muscles, that are but even subservient to Respiration, are greatly affected, peripneumonic Symptoms may come on. *Monsieur Mery* * mentions the Case of a young Man, wounded in the Tendon of the *Pectoralis major*, who was forthwith seized with a very great Difficulty of breathing, and an acute Fever.—In a word all Kinds of Pains in the Breast, and Pleurifies especially, are in a peculiar Manner dangerous; as they are very apt to bring on more or less of a Peripneumony, by causing a great Interruption to regular and easy Respiration.—And this is the Reason, why we meet with many more pleuritic Fevers, accompanied with peripneumonic Symptoms, than true and exquisite Pleurifies: Where a severe Pain of the Breast is attended with an acute Fever, Load at Breast, Cough, Difficulty of Breathing, Expectoration, or Spitting of Blood; this is always the Case, and is very properly denominated a *Pleuro-peripneumony*.—Indeed it sometimes happens, that, upon the coming on of the Peripneumony, the Pain of the Side ceases; which may happen, when the Infarction of the Lungs is so great, that little Blood passes from the right Ventricle of the Heart to the left, and the *Aorta* is not half

* *Memoires de l'Academie royale des Sciences*, 1713.

supplied with Blood : So that the Powers of Nature sinking for Want of it, all tends to an universal Stagnation, and the Patients become as it were insensible, or, as *Aretæus* * says, complain of nothing, though their Pulse intermits, and their Extremities are cold. I have seen several such Instances.—About four Years since one Mr. *Cam*, a Sailor, was seized with a compleat *Paraplegia* about the 9th Day of a *Pleuro-peripneumony*, and about twenty-four Hours before his Death.—It is a fatal Symptom therefore when the pleuritic Pain suddenly ceases, and yet the Difficulty of breathing and Load at Breast still continue, or encrease. — And the following *Aphorism* is most certainly true ; “ *A*
“ *Peripneumony supervening a Pleurify is dangerous* †.

But the Nature and Consequences of Pleurifies will more fully appear from the following Considerations.

1st. The inflamed *Pleura* is apt to cleave to the external Membrane of the Lungs, and propagate the Inflammation to them ; and this will more easily happen, when either by Nature, or Disease, a previous Cohesion had been partly formed : Hence those that have once laboured under a *Pleuro-peripneumony*, are often afterwards subject to the like Disorder ;

* *De Pulmonaria.* † *Hipp. Aphorism. II. Sect. vii.*

the *Callosity*, as I may call it, formed by the *Concretion*, straitening the Blood-vessels of the *Pleura*, and making them more liable to be obstructed by a fizy Blood for the future.— Not to mention the more or less Impediment, which the Adhesion of the Lungs to the *Pleura* gives to full and free Respiration.

2dly. As the external Membrane of the Lungs is only a Continuation of the *Pleura* itself, the Inflammation may be diffused from one Part of the *Pleura* to another, and even to that which immediately invests the Lungs; for it may spread a considerable Space, just as we often see a small inflammatory Speck on the Eye soon spread into a general Inflammation of the whole Globe, Eye-lids, &c.— Besides the Inflammation may primarily fall on this Membrane of the Lungs, and then Pains, altogether like the pleuritic, will arise, though the internal Membrane of the *Thorax* (or *Pleura*) may not be affected.— I am quite of the experienced *Hoffman's*† Opinion, that this is often the Case.

3dly. The very *Mediastinum* is but a *Duplication* of the *Pleura*, and an Inflammation may attack any Part of it, or be propagated to it; in which Case very acute Pains are felt under the *Sternum*, or between the Shoulder-blades:

† *Cap. de Febris pneumonicis, Tom. IV. Parte i.*

This we sometimes meet with, and it is generally attended with great Danger.—Both *Hippocrates* * and *Aretæus* † take Notice of a *dorsal Pleurisy*, in which the Pain shoots from the Spine to the Breast-bone, attended with an *Orthopnœa*, Cough, and a very difficult and small Expectoration. — This seems to be the Case mentioned. — Sometimes the Pain is forward and directly under the *Sternum*, where the *Mediastinum* is attached to it, and in Consequence of it Apostems have been found in that Part. — When the Pain seems to lie very deep in the Chest, with a great Load and Anxiety, Palpitation of the Heart, and a constant Inclination as it were to raise a Cough, the *Pericardium* (the external Membrane of which is also from the *Pleura*) is commonly inflamed.—Where the Pain is spread all over the Breast, with a great Oppression, and perpetual darting pricking Pains here and there; not only the *Mediastinum*, but the external Membrane of both Lobes of the Lungs seems to be inflamed: The great Difficulty of Breath, Load and Anxiety, perpetual Cough, and constant Desire of sitting up erect, shew this to be the Case; and a very dangerous one it is, as well as an Inflammation of the *Pericardium*.—Inflammations of the *Mediastinum*, *Pericardium*, and Membranes of the

* *Lib. III. de Morbis, Sect. xxi. Edit. Lindeni.*
de Pleuritide.

† *Cap.*

Lungs, seem to be what the Ancients called an *Erysipelas of the Lungs*; *Hippocrates* describes it as an acute Fever, with great Pain in the fore Parts of the Breast and in the Back, with much Load, seeming Fulness, and a dry Cough *.

4thly. The upper Membrane of the *Diaphragm* is likewise from the *Pleura*, and may be either primarily inflamed, or secondarily from the Inflammation of the *Pleura*: And this certainly happens more commonly than is imagined.—This is called a *Paraphrenitis*, and is attended with a very acute Fever, and a very violent Pain extended from the lower Ribs to the lowest *Vertebræ* of the Back, a short, convulsive, *singultuose* Kind of breathing, a vast Anxiety and Uneasiness, dry Cough, Hiccup and Delirium; an excessive Pain is particularly felt on every Inspiration, which darts itself from the Pit of the Stomach to the very Loins; the *Hypochondrium* of the Side affected is drawn inwards, and upwards † under the Ribs, and the Abdomen is scarce perceptibly moved in Respiration, but remains fixed and convulsed as it were by the Violence of the Pain, in attempting an Inspiration.

Any Part therefore of this widely expanded Membrane being inflamed, a Kind of Pleuri-

* *Lib. I. de Morbis, Sect. xiii. Edit. Linden.*

† *Si septum transversum percussum est, præcordia sursum contrahuntur. Celsus, Lib. V. Cap. xxvi.*

fy is generated, in which the Lungs themselves by *Continuity*, *Contiguity*, *Cohesion*, or *Sympathy*, will soon become greatly affected. — Nay the Lungs may, and often are found to adhere to the *Mediaſtinum* and *Diaphragm*, as well as to the *Pleura* commonly ſo called. — But if the Lungs ſhould not adhere to any Part of the *Pleura*, peripneumonic Symptoms may ſupervene an Inflammation of it; becauſe the Let and Hinderance it gives to a regular Reſpiration will greatly interrupt a due Circulation of the Blood through the Lungs.—The ſame may be ſaid with Reſpect to any conſiderable Inflammation of the intercoſtal Muſcles, or *Periosteum* of the Ribs.—Indeed in theſe Caſes the peripneumonic Symptoms may not preſently come on, nor commonly do they till after two, three, or four Days; but as the inflammatory Pain hinders a due Expansion of the *Thorax*, and a ſufficient *Inflation of the Lungs*, they at length alſo may become greatly affected.

Theſe then being too often the Conſequences of pleuritic Fevers, we ſhould endeavour to take off the Inflammation in a true, or baſtard Pleuriſy, as ſoon as poſſible, by large and repeated Bleeding, cooling nitrous Medicines and Drinks, Fomentations, Opiates, &c.—In a Word, we ſhould treat the Caſe as a *mere Inflammation of the Membranes, Muſcles, or Periosteum*; but when a Load at Breſt, Cough,

Expectoration, &c. come on, we must have a Regard to these also, as well as to the Pain of the Side, &c.

And it is that the Nature, Situation, and Difference of the Diseases of the Breast, and Lungs, may be more easily known and distinguished in Practice, that I have been so particular in describing them: For it would be no small Absurdity to give Expectorants, *oleaginous Linctus*, and Pectorals, in a simple Inflammation of the Muscles of the Breast, or Pleura; even although a slight symptomatic Cough, and some Difficulty of breathing should attend, especially at the very Access of the Fever; whereas well timed Bleeding, and a proper Regimen would have soon carried off the Disorder.—On the other Hand, it would be altogether as wrong to rest solely on Bleeding and Fomentations, where the Lungs also were primarily, or even secondarily, affected in any considerable Degree.

The Distinction of Pleurifies into *true* and *bastard* hath a real Foundation in Nature, and is of some Import in Practice, for when the intercostal Muscles only are inflamed, much more is to be expected from topical Applications, as Fetus, Cataplasms, Blisters, Cupping and the like, than when the Pain of the Side is from an Inflammation of the *Pleura*, or external Membrane of the Lungs.—The Soreness

ness to the Touch, the Pain on lying on the affected Side, and chiefly on a full Inspiration, the Tumor and Redness of the Part which sometimes appear, distinguish this from the internal Pleurify.

Besides there are some Pains of the Side, and those too pretty severe, which arise from a sharp acrid Defluxion on the Muscles of the Breast, and Periosteum of the Ribs; and which much sooner give Way to topical Applications, edulcorant Medicines, and proper Purges, than to Bleeding, which in such Cases is no further necessary than to take off a *Plethora*, if it subsists.— Indeed where an acrimonious Humor is the Cause, you may bleed and bleed on to very little Purpose, but that of weakening your Patient. Will Bleeding cure obstinate scorbutic or venereal Pains? It may as well remove the Pain from a rotten Tooth, or a Thorn in the Flesh.

The Ancients well distinguished between wandering rheumatic, or flatulent Pains about the Breast and Side, and the truly pleuritic. *Hippocrates* justly styles them Ἀλγήματα ἰσχνῶς ἐσσηκότες ἄσημα *, and forbids Bleeding in them:

* Shifting, erratic, slight Pains, *without the true Pleuritic Symptoms*; *Coac. Prænot.* 491. *Edit. Fœssii.* — Compare this with the Caution about Bleeding at the End of *Duretus's* second Book on the *Coac. Prænot.*

These they attempted to cure by Fomentations, Purging, &c. not by Bleeding: whereas the fixed, *systrophic* Inflammation of the Breast, as the *Commentators* call it, always required Bleeding.—And we eventually find erratic, scorbutic, rheumatic Pains much better carried off by Purging, Fetus, Diaphoretics and Edulcorants, than by Bleeding.—Some of them indeed give Way to nothing but Mercurials, Antimonials, anodyne Plasters, Cupping, or Blistering; and some wear off only by Time, Patience and Exercise. When the Pains are at the Bottom of the Thorax, in the *Hypochondria*, or below the Midriff, attended with *Borborygmi*, and a tumid Abdomen; Clystering, or Purging, is unquestionably proper: And yet these Pains are sometimes very acute, and, from the Inflation of the Intestins by Wind, oftentimes accompanied with no small Difficulty of breathing; but as *Aretæus* observes, they are very improperly called *pleuritic*.—I have many times seen such Complaints vanish immediately on the Use of a Clyster, or a few Stools, to the Surprise of those, who were ignorant of the Cause.—Bleeding in this Case always encreases the Flatulence and Pain.—This is entirely consonant to the *Hippocratic* Doctrine, and the Truth of Things; for the great Dictator of Physic says expressly, when the Pain is below the *Septum transversum*, and the Abdomen is tumid, you should purge gently

gently with black Hellebore, *Peplium*, *Silphium*, to which add Cummin, Anise, &c. that it may carry off the Wind as well as the Stool*.

But in all these Cases the Pulse, Degree of Fever, the Tongue, Situation of the Pain, and Manner of Breathing, pretty clearly discover to the judicious Practitioner what is the Matter, and what is to be done.—When the Pain of the Thorax is violent, the Pulse hard, tense and quick, the Fever high; the Pains may be pronounced pleuritic, especially when a *Rigor* preceded.—True pleuritic Disorders almost always begin with a *Rigor*, and the Pulse is very hard and tense, like the Vibrations of a *Cord*: The Pains are very sharp, pricking and fixed, not tense and shifting, as the flatulent; nor uncertain, wide and wandering, as the rheumatic.—The Hardness of the Pulse is one of the most *pathognomonic* Signs of an Inflammation of membranous Parts; when therefore Pains lie under the *Sternum*, or shoot from the Spine to the Breast-bone, you may guess the *Mediastinum* is inflamed, by the Tension of the Pulse.—The Lungs, as *Aretæus* † says, being insensible (at least much less sensible) a *Vomica* is often formed in the Lungs without much attendant Pain. The *Membranes* of any *Organ* are vastly more sensible than what is called its *Parenchyma*, the

* *De Viâtu acutor. Sect. xiii. Edit Lindeni.*

† *Cap. de Pulmonar.*

Ureters than the Kidnies, the Membranes of the Brain than the Brain. — The Hardness of the Pulse then, and Violence of the Pain, may be the chief *Diagnostics* in Disorders of the Thorax; and greatly determine as to Bleeding, &c. — I think the Situation of the Pain is not so much to be regarded, as some make it; for as any Part of the Pleura, intercostal Muscles, or Periosteum of the Ribs may be inflamed; the Pain may be felt in any Part of the Thorax: And I have known as severe Pains near the bastard Ribs, as in any other Part. *Hippocrates* and his Commentators determine Bleeding to be then peculiarly proper, when the Pain shoots up to the Clavicle and Shoulder; but in my Opinion, when the Pain is very severe in any other Part, it is equally necessary:—The Pain is very low in a *Paraphrenitis*, and yet none more loudly demands it. When the *Pectoralis major* and *Serratus anticus minor* are inflamed, the Pain cannot but dart up to the Shoulder, as their *Tendons* are inserted near its *Articulation*: This is often the Case in a bastard Pleurisy, and is most effectually relieved by Bleeding and Fomentations; but these would be as necessary, if the intercostal Muscles, or Periosteum of any of the Ribs, were inflamed.

Though some Pains of the Side may be greatly different from the pleuritic, and require much less Bleeding; they should never be neglected,

lected, especially if they considerably obstruct the Respiration: For then they are always followed with very ill Consequences; a strong Instance of which you have in the following History.

About *Christmas* 1728. Mr. T—ll, a worthy sober Gentleman, about thirty, of a thin Habit of Body, but a lively active Disposition, was seized with a Pain in his *right Side*, and grew a little feverish; the Pain was so slight that he never confined himself. He was bled however, and took some few Things from his Surgeon.—But finding the Pain of his Side daily encreasing, about three Weeks, or a Month, after the first Attack, he consulted me.—I found him under hectical Heats, a short Cough and Difficulty of breathing, which last he said proceeded merely from the Pain of his Side: He expectorated little, and that with Difficulty; and it was now sometimes slightly tinged with Blood.—I ordered him to be bled, to take an oily expectorating Mixture, *Lac ammoniac. Oxymel scillitic.* the saline Draughts and pectoral Decoction, and kept him to a cool diluting Regimen. By these Means in a very few Days he began to spit off a vast Quantity of purulent, bloody, and foetid Matter, which proceeded from a *Vomica* in the *left Lobe* of the Lungs; for he felt a Soreness in, and said that the Matter came from, a *Place* to the

left of the *Sternum*, towards the Bottom of the *Thorax*.— At length very little was expectorated, and that neither foetid, nor bloody; and his Cough daily abated, nor did any great Load at his Breast remain: A pectoral balsamic Decoction of the *Bark* soon also took off his remaining Heats and Sweats; so that I flattered myself with Hopes of his speedy Recovery.— But, notwithstanding all these promising Symptoms, the Pain of his *right Side* still continued, exactly in the same Place where it first began; nay it soon became exceeding violent, so that I thought it necessary to bleed him again, and even repeat it; I ordered also emollient Fomentations, and an anodyne Plaster of *Opium*, *Camphire* and *Emplastr. à Cymino*; and, these not availing, cupping on the Part with Scarifications.—All was in vain, for the Pain daily increased, and nothing gave the least Ease, or Sleep, but repeated Opiates.—At last the Part began to swell considerably, and manifest Signs of an *Abscess* came on, which I endeavoured by all proper Methods to promote.— In a few Days the Surgeon opened it, from whence issued an immense Quantity of purulent Matter, so much, that we imagined it came partly from the *Cavity of the Thorax*.— Upon further Examination we found two of the Ribs foul and black, and two Penetrations, one between the fifth and sixth of the true Ribs (which were

were *carious*) and the other between the fourth and fifth, reckoning downwards. He, being exceeding weak, hectic and emaciated, died *March 29th, 1729.*

On examining the Body some of the intercostal Muscles, Part of the *Serratus anticus major*, and the supreme Portion of the *Obliquus descendens* appeared *black* and *sphacelated*, and the Impostume had extended itself almost home to the *Spine* of the *Back*: The lower Part of the *Pleura* was quite black, and the *Diaphragm* also on that Side, *livid*. The upper Perforation entered the *right Lobe* of the Lungs, which, for a considerable Way round it, was purulent. — In the left Lobe we observed a Kind of *Callosity*, of a pretty large Extent, where probably the *Vomica* lay; and near the *Vertebrae* a large *Tumor*, bigger than a Turkey-egg, in a State of Suppuration: There were several other small Tubercles, some very hard and almost stony, some suppurated and full of *Pus*. — Both Lobes of the Lungs were greatly diseased, and, in some Places, quite livid. — They adhered firmly to the *Pleura* in a vast many Places, some of the Adhesions of a pretty large Extent, some by a Sort of fibrous Ligaments. — In the *right Cavity of the Thorax* was about half a Pint of very foetid dark-coloured Matter.

Probably some Obstructions were formed in this Gentleman's Lungs antecedent to the Pain
of

of his Side, as he had been sometimes subject to a short dry Cough ; but I am persuaded the sharp Humor, that fell on the Ribs and intercostal Muscles, by hindering a free Respiration, greatly contributed towards the Obstructions and Suppurations in his Lungs ; and by preventing also a due Expansion of the *Thorax*, it might encrease, at least, the Adhesion of the Lungs to the Pleura.

I shall conclude this Chapter with a Word or two on the Method of treating inflammatory Pleurifies : — In which, without all Doubt, drawing off more or less Blood is indispensably necessary, previous to any other Attempt of Relief : The Strength of the Patient, Pulse and Fever, the Violence of the Pain and Difficulty of breathing must determine the Quantity. — But let me add, the Quality of the Blood should also be nicely inspected ; for a dense fizy Blood not only indicates an abundant Quantity of the red Globules, but likewise its inflammatory Disposition, and that the Patient, if Need be, can well bear large and repeated Bleeding.

It should be duly considered, that if an Inflammation of the *Pleura*, &c. is not timely abated by Bleeding, or resolved by proper diluting, antiphlogistic, emollient Drinks and Medicines ; it cannot but end in an Impostumation, or Gangrene. Besides these Pleurifies
rarely

rarely fail of bringing on peripneumonic Symptoms, if of any Continuance; and therefore we cannot be too early and earnest in endeavouring to take off the Inflammation: For the Pain thence arising greatly embarrasses the Respiration, and of Course the due Circulation of the Blood through the Lungs; which being now also in a very viscid State (the immediate Occasion of the original pleuritic Inflammation) is much more apt to stick in the ultimate Branches of the pulmonic, or bronchial Arteries, than if it was more thin and fluxile. This is the Reason, why Pains of the Side, from Inflammation, bring on Peripneumonies much more frequently, than when from a mere acrimonious Defluxion, or the like. — Here therefore *Celsus's* Maxim is certainly right, *Remedium . . . est magni & recentis doloris, sanguis missus*; and what he adds is true likewise, *at si . . . vetustior casus est, . . . serum id auxilium est* *.

An emollient cooling Clyster should immediately succeed Bleeding, especially if the Body is costive, which not only empties the Intestins of gross Excrements and *Flatus*, but also derives a greater Quantity of Blood through the descending *Aorta* and *Iliacs*, and in both Respects eases the superior Parts. † *Hippocrates* constantly advises to clyster in the Beginning of

* *Lib. IV. Cap. vi.*

† *De Victu acutor. Sect. lii.*

Pleurifies, and gives this exceeding good Caution: That we should neither suffer the Body to be too costive, lest it encrease the Fever, nor too loose, lest both the Strength and Spitting fail*.

This done let the pained Part be fomented with a Decoction of *Sem. Lini.*—*Fœnugræc. Flor. Chamæm.* in Milk and Water.—This was also the Practice of the Ancients; *Hippocrates* † says Fomentations should be tried both at the very Begining, and afterwards, to resolve the pleuritic Pains: These, both of the dry and humid Kind, he constantly advises in Pleurifies.—I have often seen them succeed, when repeated Bleeding had proved ineffectual.—Pain, especially inflammatory Pain, always arises from too great a Tension of the Fibres, which emollient Fomentations, by relaxing, take off. I greatly prefer humid Fomentations, or Cataplasms, to any Thing of a dry Heat in an inflammatory Pain of the Breast, or Side, as they without all Doubt much more efficaciously relax: *Hippocrates* himself advises against using the dry Stupes || too long, and recommends those that are moist ‡ near the *Crisis*.—*Celsus* says, we should use the dry and hot, when the Inflammation is a little abated, and then pass

* *Lib. III. de Morbis, Sect. xvii.* † *De Vi&et. acut. Sect. xi, xii. Edit. Linden.* || *Ibid. Sect. xii.* ‡ *Lib. III. de Morbis, Sect. xxiii.*

to the *Malagmata* *. I commonly apply an anodyne Plaster of *Opium* ʒi, *Camphire* ʒi, *Emplastr. è Cymino*, after due Fomentations, with very good Success, but always first try the humid Fetus. — In very threatening Circumstances, Fomentations may also be applied to the Abdomen, *Inguina*, &c. which, by taking down the too great Stricture of the Fibres in general, will lessen the Impetuosity of the Blood. — Emollient *Baths* would be more effectual, when they can be conveniently used; *Hippocrates* says they relieve Pains of the Back, Sides and Breast: Their exceeding good Effects in *Colics*, and *nephritic Paroxysms*, should prompt us to try them in very violent obstinate Pleurifies, and a *Paraphrenitis*. — The Ancients supposed that warm Applications digested the Matter, and promoted Expectoration; the latter they certainly do by easing the Pain, and giving more Liberty to the intercostal Muscles, &c. to expand and contract the Thorax, and pump up the Matter; hence in *Pleuropneumonies* they cannot but be of very considerable Service, even in that Respect.

Nitrous Medicines, with a cooling, emollient, diluting Regimen, should be forthwith entered upon. Thin Whey, a Decoction of Barley and red Poppies, Emulsions, and such

* *Lib. IV. Cap. 6.*

like,

like, answer all the Intentions of Drink ; and Nitre both cools and attenuates the Blood : With these should be joined gentle Anodynes, repeated as there may be Occasion ; *Elixir pargoricum* and *Diacodium* seem to me the most adapted : To these may be added *Sperma ceti*, a soft relaxing animal Oil, very penetrating, though not heating ; and, where the Rigidity of the Fibres is very great, the cool vegetable Oils, as of Linseed, or Almonds, may be given with Advantage. That an emollient relaxing Method is indicated, in the Cure of Pleurifies, is evident from hence, *viz.* That the strong and laborious, Persons of very rigid Fibres, and dry Constitutions, are most subject to this Disease, and suffer most from it, and withal that it rages most in cold and dry Seasons.

The Violence of Pain unquestionably demands the Use of Opiates, after Bleeding, which prudently interposed are certainly of exceeding great Service.—As Pain is a *Stimulus*, which greatly quickens the Circulation, and heats the Blood, and derives likewise more than natural to the pained Part ; it cannot but encrease the Inflammation. — A Thorn in the Flesh will cause some Degree of Fever, and an Inflammation around it.—Moreover when a sharp Cough attends, as in Pleuro-peripneumonies, it should be mitigated by *Diacodium*, or the like ; else the great Agitation, it causes, will

will also encrease the Inflammation.—It is true indeed, these demand some Degree of Caution and Prudence in the Use of them; therefore ever remember, before you enter upon them, the Lancet is not to be sparingly used, when the Pain is very violent, the Pulse very hard, quick and tense, and the Fever high.—The following Instance shews what may, and must be done sometimes in Pleurifies and *Pleuro-pneumonies*, when the Attack is with extreme Violence.

About four Years since a strong plethoric Gentleman, about forty, was seized with a Fever and a violent Pain of his Side: He was immediately bled to sixteen or eighteen Ounces:—This abated the Pain.—He got up, sat by the Fire in a smoaky Chamber, drank near a Quart of cold Cyder, fell into a vast Rigor, succeeded by a high Fever, excessive Pain of his Side and Breast, great Difficulty of breathing, Delirium, and the most incessant terrible Cough I ever heard, which pumped up great Quantities of fresh frothy Blood.—I was obliged to bleed him three Times in twenty-four Hours, and to give him *seven Grains of solid Laudanum*, besides two or three Ounces of *Diacodium*, in that short Space of Time;—and this, and this only (for he would take no other Medicine) happily recovered him.—This indeed is a very extraordinary Instance:—But the Method,

thod, which is above recommended, I have in a Multitude of Cases experienced to be very safe and very effectual; infinitely more so, I think, than the *Sanguis hirci*, *Priapus tauri*, and the other Whimsies which *Helmont* so greatly extolls in appeasing the *Archæus*, and quieting the *Pleura furens* *; notwithstanding he is so very arch and severe on the Sons of *Galen* and the *Schools*, for attempting to cure Pleurifies by Bleeding.

In several epidemic Pleurifies, I have known easy Sweating, especially after the third or fourth Day, of very great Advantage; and, with this View, have often added Camphire to the Nitre, &c. which, joined with small Doses of *Elixir paregoricum* out of thin warm Whey, or Ptisan, seldom or never fails of answering the Intention.—In chilly wet Seasons, and Persons formerly subject to catarrhal, or cold rheumatic Disorders, this is a very proper Method, when a due Quantity of Blood hath been previously drawn off: In such Cases also gentle Purging is useful.—It is certain, from the best Observations, that in some Constitutions of the Air Patients, under pleuritic Diseases, will not bear the Loss of much Blood, particularly in continued wet foggy Weather: In general we find they sustain the Loss with much better Ef-

* *Vid. Helmont. Pleura furens.*

fect, and less Inconveniency, in a cold dry Spring than in a wet Summer, or a rainy Autumn. Nay there are some Pleurifies, at least vulgarly so called, that will admit of little or no Bleeding, in which the Pain of the Side seems a mere Symptom, not the Disease; as the Pains and Soreness preceding, or attending putrid malignant Fevers, Small-pox, &c. are not properly rheumatic, but purely symptomatic.—Such Pains then arise from Acrimony, not Inflammation, and are to be cured by Diluents, Diaphoretics, Eccoprotics, Blistering, &c. not by Bleeding, which is forbidden by the Ancients where *Bile* (by which they meant Acrimony) is greatly predominant.

It was an Observation of *Asclepiades* *, that the People of *Rome* and *Athens* did not bear Bleeding in Pleurifies and Peripneumonies as well as those about the *Hellespont*; the former lying to the South, and in a much more warm and moist Air than the latter, who were much exposed to cold dry northerly and easterly Winds: *Hollerius* makes the same Observation with Respect to the People of *Paris*, who lie pretty cold, and the Inhabitants of the southern Parts of *France*, who are more to the South and much warmer †.—Indeed, within a much

* *Vid. Cæl. Aurelian. Lib. II. Cap. xxii. de Morbis acutis & chronicis, Amst. 1722. 4to.*

† *Holler, in Aphorism. 2. Hippocr. Sect. i.*

narrower Compass, I have once and again taken Notice, that an epidemic Disorder, which in low warm Places near the Sea proved only a slight catarrhal Fever, and scarce required any Manner of Bleeding, hath, in the neighbouring cold and high Exposures, been attended with severe pleuro-peripneumonic Symptoms, and demanded no small Evacuation of Blood.

—Without all Doubt, the very Constitution of the Solids and Fluids differs considerably, according to the different Situation of the Inhabitants.—Upon the whole then let me add this *Corollary*, that in Practice we not only ought to consider the peculiar Nature of the Epidemic, but also of the Season, and the Constitution of the Patients.





A P P E N D I X.

A Method for preserving the Health of Seamen in long Cruises and Voyages.

IT is well known what vast Numbers of Sailors we have lost within these few Years, by terrible scorbutic Disorders, owing chiefly to bad Provisions, bad Water, bad Beer, &c. the unavoidable Consequence of long Cruises and Voyages: For the Provisions will naturally decay, the best Beef and Pork corrupt, the Water spoil, and the Beer (at least such as the Navy is supplied with) will not keep good very long. Of Course, the long and constant Use of such Provisions must by Degrees taint the Juices of the Body, produce great Acrimony in the Blood, and dispose it daily more and more to a State of Putrefaction. These Effects will be considerably augmented by living continually in a moist, salt Atmosphere, and breathing the foul, polluted Air between Decks.

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Constant Experience shews this to be the Case. I have known more than a thousand Men put ashore sick out of one single Squadron, after a three Months Cruise, most of them highly scorbutic; besides many that died in the Voyage. The Fleet returns to its Port; fresh Air, wholesome Liquor, fresh Provisions, especially proper Fruits and Herbage, soon purify the Blood and Juices of the Sick, and restore their Health. The fresh Air, Provisions, Fruits, and Garden-stuff, which the *English* and *Dutch* meet with at *St. Helena*, and the *Cape of Good Hope*, are of the highest Advantage to them in their *East India* Voyages; without which they always become extremely sickly.

Physicians well know, that the most effectual Method of correcting an alcalescent Acrimony of the Blood, and of preventing the further Advances of Putrefaction in the Humors, is by vegetable and mineral Acids; the former of which are much the safest, and may be given in Draughts, the others only by Drops.

That the State of the Blood, in the common Sea-scurvy, is of this Nature, appears from the stinking Breath of the Sick, their rotten corroded Gums, high-coloured foetid Urine, sordid Ulcers, black, blue, and brown Spots, and Eruptions on the Skin, frequent feverish Heats, foul Tongues, bilious and bloody Dysenteries,

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senteries, which more or less always attend it. Now it is also well known, that a vegetable acescent Diet and Regimen, fresh Air, fresh Provisions, subacid and vinous Drinks, are its certain and speedy Cure, when not very far advanced. Apples, Oranges, and Lemons, alone, have been often known to do surprising Things in the Cure of very deplorable scorbutic Cases, that arose from bad Provisions, bad Water, &c. in long Voyages.

But what will cure will prevent. If therefore such a Diet and Regimen can be used at Sea, it will prove a Kind of a continual Antidote to the rank putrescent Qualities of the common Ships Provision, and correct, at least very much lessen, the ill Effects. And it is eventually found, that the Officers, who carry Wine, Cyder, Lemons, fresh Provisions, &c. are infinitely less affected with the Scurvy, than the poor common Sailors, who are not so provided.

Is it practicable then to introduce such a general Regimen into the Navy? I think it is; and, from Reason and Experience, I recommend the following Method.

Let all Ships, that are to proceed on a long Cruise or Voyage, be supplied with a sufficient Quantity of sound, generous Cyder; the rougher, provided it is perfectly sound, the better. If Apples are found of such vast Ser-

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vice in the Scurvy, surely the Juice of them, when become a vinous Liquor, cannot but be very salutary; and seems exceedingly well adapted, as a common Drink, to correct by its Acidity the alcalescent putrefying Quality of bad, corrupt Provisions. This Cyder should be at least three Months old before it is served in, and quite fine. If it be too new, and foul, it is apt to give severe Colics: It should be racked off once at least from its gross Ley into good and sweet Vessels, which will contribute to its becoming fine, and prevent it from growing ropy, in which State it is good for nothing. But if some of it should turn to Vinegar, which may frequently happen, it will still be very serviceable; but it is found, when well managed, to keep good and sound even to the *Indies*.

Every Sailor should have at least a Pint of Cyder a Day, besides Beer and Water. And I would advise also a frequent and free Use of Vinegar in the Seamen's Diet; especially when the Provisions begin to grow rancid. Besides this, the Decks, &c. should be frequently washed, or sprinkled with Vinegar; after having drawn the gross and foul Air out of the Ship by Mr. Sutton's Contrivance, or by Dr. Hales's Ventilators; which should be done once at least every Day.

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In autumnal Cruises a Quantity of Apples might be also carried, which, when well chosen and well put up in dry tight Casks, will keep very good for two or three Months. Even Lemons and Oranges wrapt in Flannel (or something that will imbibe their exhaling Moisture) kept in close dry Vessels, and pretty cool, may be preserved a long while also. If this is not so feasible, a Mixture of Lemon Juice and Rum (Shrub as they call it) may be carried in any Quantity; as it will keep a long Time, and would prove infinitely more wholesome than the nasty firey poisonous Spirits, which are dealt about so largely in the Navy and elsewhere. By the bye, nothing would more effectually correct the pernicious Qualities of these Spirits than Lemon Juice.

In the Case of stinking Water, Juice of Lemon, Elixir of Vitriol, or Vinegar, should be always mixed with it, which will render it much less unwholesome: The *Roman* Soldiers drank *Posca* (*viz.* Water and Vinegar) for their common Drink, and found it very healthy and useful.

Elixir of Vitriol or Vinegar are already allowed to the Navy in large Quantities, and have been found greatly serviceable. And there was lately an Order issued for supplying the Ships of War with Cyder also, which I

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am morally certain will be of the highest Advantage, if properly and honestly managed. Indeed it hath already been actually found so in some few Men of War, and other Ships, where it hath been tried, even though in small Quantities. Let me add, that the Prize Wines, which are commonly low and thin, and very frequently spoil by keeping, might be distributed amongst the Sailors (especially in Want of Cyder) to very good Purpose.

This indeed may be deemed a very expensive Project; but, where the Lives of so many brave and useful People are in the Case, I think the Cost should by no Means come into Competition with the Advantage that may be received from it. The *Romans* constantly carried with them Vinegar and Wine in their Fleets and Armies, and the common Soldier and Sailor daily partook of both: Nay, they were at many other considerable Expences to preserve the Health of their Armies, &c. Now, if that glorious prudent People thought the Life of a *Roman* Soldier so valuable, and were at such Expence to preserve it; why should not we have as much Regard to that of a *British* Sailor, who is altogether as brave and as useful to the Commonwealth?

I cannot conclude without taking Notice, that the usual Methods of impressing Seamen,

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on their Return from long and tedious Voyages, void of Necessaries, chagrined at not seeing their Friends and Families, and most commonly in a bad State of Health, and not allowed Time and Opportunity to recover it, hath been the Bane of thousands: And I could wish, for the Honour of the Nation, a Method of manning our Fleet could be found out more consistent with common Humanity and *British* Liberty.

Plymouth, Sept. 30, 1747.



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